2015 Specialty Crop Block Grant Program - Farm Bill

FY 2015 Final Performance Report
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Table of Contents

Specialty Crop Block Grant Projects

Massachusetts Department of Agriculture
2015 Specialty Crop Block Grant Program - Farm Bill
Final Report

Organization:
Ascentria Community Services

Project Title:
Accessibility and Distribution of Specialty Crops to Socially-Disadvantaged and Minority Populations

Project Summary:
During our "Accessibility and Distribution of Specialty Crops to Socially-Disadvantaged and Minority Populations" project, New Lands Farm, a program of Ascentria Community Services, worked to enhance new American farmers' marketing skills while creating accessible direct to consumer and wholesaling market channels to widen the volume and sale of ethnic produce. The project benefitted fifty-five new American farmers and their families involved in growing and selling ethnic produce, and who participated in trainings with newly developed curriculum, attended new ethnic crops markets, and expanded their sales of ethnic crops by 20%. Farmers were able to reach over 11,000 consumers (about 61% being low-income) with locally grown specialty ethnic crops and influence three new retailers to carry more ethnic crops. Farmers were also given the opportunity and resources to trial new ethnic crops, including sourcing authentic seeds and seed saving trainings. The impact of this project on the local food system will grow in the future as the New Lands Farmers continue to develop independently their skills to efficiently grow and market ethnic food crops. These farmers hold a very important role in diversifying not only the makeup of the food system, but also ensuring the diversity of food grown in Massachusetts.

Project Approach:
Minorities and immigrants often have difficulties accessing fresh fruits and vegetables that match their preferences and traditions. Ethnic produce is frequently imported from other countries and suffers in quality as a result of transport time, or specific varieties may be unavailable. Farmers at New Lands Farm, a program of Ascentria Community Services, are refugees and immigrants from around the world, who specialize in ethnic crop production, in particular of those crops from their countries of origin. Through our previous Specialty Crops project, we learned that there is unmet demand for locally-grown, specialty ethnic crops in Central and Western MA and focused on improving farmers' crop production skills to help match that demand. Under the current project, we took this initiative to the next level by addressing distribution-side barriers. Our project focused on improving the competitiveness of specialty ethnic crops by facilitating effective distribution channels in Central and Western Massachusetts and increasing the volume of local, ethnic crops available for purchase by providing continued technical assistance to farmers.
The cost of information is as significant as pricing in modern business transactions. Immigrant farmers have cultural capital and language abilities which other farmers do not, greatly aiding in their particular ability to access markets within non-English speaking communities. Our Accessibility and Distribution project addressed these farmers' remaining barriers to successful ethnic crop distribution, through financial literacy trainings, direction of farmers to literacy classes and additional literacy support in their farm businesses, and hands-on marketing training and technical assistance. Through this project, New Lands Farm expected to improve farmers' sales

competence and confidence, create an additional, farmer-run ethnic crop market stand, increase farmer direct sales within their communities, and facilitate additional ethnic crop retail accounts with local businesses. Combined, these outcomes would increase the availability of local, culturally-appropriate specialty crops to socially-disadvantaged and/or minority populations in Central and Western Massachusetts and improve famers' sustainability through the sale of specialty crops.

Project Activities:

December, January, February

During the first quarter, staff focused on finding an appropriate new farmers' market in which to set up farmers, and also explored the possibility of starting a new farmers' market in the farmers' neighborhood. Ultimately, staff decided that joining the City Soul Farmers' Market (located in a low-income Springfield neighborhood) would be the best place to train farmers to independence. We also developed the curriculum for and taught the first farmer marketing class. Farmers learned the importance of crop consistency in marketing, and what has worked for Worcester farmers marketing ethnic crops through the farmers' market. The class also covered basic but important business guidelines, such as how to set appropriate prices, and setting the farm crop plan for the season.

Staff worked to created culturally relevant visual advertisements to announce the future availability of ethnic crops. Worcester staff also worked with existing partners to plan for an increase in ethnic crops sales to the food hub and mobile market at the Regional Environmental Council of Worcester. This increase was added to the farm crop plan and we worked with improve the system of communication between agencies to increase capacity of ethnic crop sales.

March, April, May

In the second quarter, staff took care of several of the logistical hurdles to joining a farmers' market: being certified to accept WIC and Senior coupons; development and distribution of ethnic crop ads and outreach to the refugee community; and acquisition of seeds for the harder to find specialty ethnic crops. Staff also researched new specialty ethnic crops that may be of interest to local communities and sourced seeds for those as well.

Staff networked with other organizations, businesses, and individuals in the area who are working for healthy food and especially fruit and vegetable access in low-income neighborhoods. Staff also prepared a farmer to advertise the new market stand at West Springfield's Earth Day celebration and answer any questions people had.

Recognizing that one of the main barriers to distribution of local specialty ethnic crops is the cost of information, staff also worked with the Go Fresh Mobile Market to better reach low-income refugee and immigrant neighborhoods. In addition to lobbying for a stop at the Caring Health Center (where many refugees and immigrants go for health care, and located near Jewish Family Services' refugee resettlement office) staff provided CHC and JFS with information and flyers about the new market stop. Staff also worked with the Mobile Market operator to change the regular orders to include crops that staff believed would be successful in the refugee/immigrant neighborhoods. While not all have caught on as well as hoped, some took off better than we had imagined. We believe that if in coming years the supply for those keystone vegetables (shell beans and collards being the most important) is kept stable, the Mobile Market will continue to draw diverse populations and serve as an excellent marketing outlet for ethnic crop growers.

Staff began providing farmers with hands-on technical assistance in the fields, and an additional class on seed saving techniques. Since many of the specialty ethnic crops are uncommon locally, finding a secure seed source is almost impossible. Staff trained farmers to save true-to-type seeds from the most important specialty ethnic crops and those for which it is hardest to get seeds.
In Worcester, a special relationship was forged between Muslim Community Link, Inc. and farmers to support a new farmers' market set to open in the July. The Black Seed Farmers' Market located at the Islamic Center of Worcester and open on Sunday, the only day in Worcester without a market, offered to purchase vegetable from New Lands, including ethnic crops, on a weekly basis.

June, July, August

Most of staff time in the third quarter was spent directly with farmers. In addition to continued field technical assistance, staff worked with farmers to prepare for the farmers' market, to decide how to organize harvest and sales and post-harvest processing. Staff also began working with the two farmers elected to work with wholesale accounts.
Staff developed and taught the first financial literacy training during this time, and took feedback from farmers to improve the curriculum for the future. The final draft of the financial literacy curriculum can be found in the Appendix C at the end of this report.
As much as possible, staff used tangible, hands-on experiences to teach content and skills, and gradually gave farmers more opportunities and responsibilities as they demonstrated competence in core skills.
Lastly, staff conducted outreach into new American communities and other organization working with new Americans to increase market awareness. Additional multi-lingual advertisements were created to increase traffic to market (see Attachment A).

September, October

By September, the farmer who had been running the farmers' market stand with staff support had to drop out due to personal reasons. Staff focused their efforts on training the wholesale farmers, and creating new wholesale opportunities for them to begin working with. Microenterprise is a program of Ascentria, who supports refugees starting small businesses. The program was able to connect New Lands Farm with additional small ethnic grocery stores in the area. Staff began working with the wholesale farmers to teach them how to establish new wholesale accounts, and maintain them in good standing.
By the late of October, staff completed all marketing data and began writing the final report.

Goals and Outcomes Achieved:

Performance Measure	Benchmark (2015)	Target (by end of 2017)	Accomplished (2016)
Number of ethnic crop retailers stocking local, specialty ethnic crops	Current Retailers	Two new ethnic crop wholesale accounts	New ethnic crop retailers which purchased New Lands ethnic produce: 1. Black Seed Farmers' Market Worcester, MA 2. Bella Villa Agawam, MA 3. Taste of Asia Market Burlington, VT

Number of ethnic product retailers contact to solicit wholesale account creation	Current & Previously-Contacted Retailers	Ten new contacts	Contacted the following retailers: 1. Black Seed Farmers' Market Worcester, MA 2. Bella Villa Agawam, MA 3. Trans World Market Hadley, MA 4. Taste of Asia Market Burlington, VT 5. Regional Environmental Council Food Hub Worcester, MA
Development of farmer-run ethnic crop market stand	N/A	One (or more) farmer-run ethnic crop market stand established	Progress towards new farmer capacity to run ethnic crop market stand: 1. increased confidence 2. essential math skills (rounding, how to use a price scale, calculator use, making change) 3. improved record-keeping skills
Sales of New Lands Farm specialty ethnic crops	4554 pounds	20% increase sales specialty ethnic crops over two years	1. 5594 pounds (21% increase)

Project Objective 1: Develop immigrant and refugee farmers' marketing skills

Program staff focused marketing training in two areas: selling through farmers' markets and to wholesale accounts. Building on past experience training Worcester farmers to run a farmers' market stand, farmers in West Springfield made significant progress towards independent sales of ethnic crops, in some cases operating at near-independence levels.

Farmers elected at the beginning of the season one farmer from each of the two primary ethnic groups to represent the group at the farmers' market. Due to illness, one of these farmers was unable to fulfill their role. Staff continued to work with the remaining market farmer through hands-on technical assistance. By the end of the market season, she had increased her confidence in speaking with customers and learned alternative names for ethnic crops at the farm stand that other cultures may use. She had also learned essential math skills, including rounding, how to use a scale that calculates total price, how to use a calculator, and how to make change. The farmer also improved her record-keeping skills, though she still required staff support to keep them.

While initially staff had considered selling at farmers' markets to be the most attainable goal for farmers, in the end staff efforts to train farmers to sell via wholesale bore the most fruit. Staff developed a training resource for low-literacy/low-English-speaking farmers that worked remarkably well (see Attachment B for full sheet):

Customer:

Need By Date/Time:

Crop	Have?	Price	Unit	Amount Ordered	Amount Packed	Cooler?	Packed?	Invoice?
Shell Beans	☐	$2.25	lbs pounds			☐	☐	☐
Mustard Greens	☐	$1.50	bunch			☐	☐	☐
Thai Chili Peppers	☐	$6.00	lbs pounds			☐	☐	☐
Habaneros	☐	$6.00	lbs pounds			☐	☐	☐
Cayenne hot pepper	☐	$6.00	lbs pounds			☐	☐	☐

Significant cultural differences separated the two wholesale farmers from being able to sell to wholesale account independently at the beginning. In their country of origin, government trucks used to come through town and buy whatever farmers had to bring into the cities. Staff had to start at the very beginning, by introducing farmers to the overall work flow of wholesale, the basic mechanics of selling to wholesale accounts, and expectations that most wholesale accounts have.

Staff worked with farmers weekly in a hands-on setting. At the beginning, staff completed all of the steps with farmers: the field to record what was available for sale; the conversation with the wholesale buyer(s) about each week's availability and prices; delegation of the harvest amongst farmers; post-harvest handling and packaging; record-keeping of the harvest; and creating the invoice. Gradually, as the farmers demonstrated competence, staff stepped back and allowed the farmers to take on additional responsibilities and independence. By the end of the 2016 season and with the exception of creating the invoice, the farmers were able to independently complete all of the wholesale steps.

The wholesale farmers have also begun contacting new wholesale accounts on their own, with some success, and intend to continue wholesale sales on their own without staff support in the coming seasons.

Project Objective 2: Develop immigrant and refugee farmers' financial literacy

Staff have finished developing core Financial Literacy curriculum for marketing farmers (Attachment C).

Farmers in West Springfield received one formal financial literacy class in February. Based on their feedback, staff have updated and expanded the curriculum to better suit the needs of beginning refugee farmers. Staff shared this curriculum within the Institute for Social and Economic Development Solutions (ISED) Community of Practice formed with funding from a Beginning Farmer grant from the USDA. This network involves staff and curriculum developers from more than 30 incubator and refugee farms. This curriculum will serve for use by other refugee farmer incubators.

In addition to formal curriculum, staff worked with farmers individually and small groups to improve their record-keeping and decision-making skills.
Unfortunately, due to the shortening of the project, farmers have not received the full benefit in this area as planned.

Project Objective 3: Increase the availability (volume and diversity) of local, ethnic produce and disadvantaged and/or minority populations in Central and Western MA

Both the Worcester and West Springfield/Springfield farmers' markets are located in poor and otherwise-disadvantaged neighborhoods. The mobile markets in each region also service poor/disadvantaged neighborhoods. As the farm CSA (community supported agriculture) was both difficult for farmers to learn to run independently and was not reaching our target audiences, we made the strategic decision to discontinue the CSA and focus on marketing through these avenues exclusively.
As a result of our work through the SCBGP, New Lands Farm made 25% and 8% (in Worcester and West Springfield respectively) more of the targeted ethnic crops available in low-income neighborhoods. Ethnic crops not on the targeted list (including field corn, dill, green tomatoes, and taro leaves) increased by 101% and 22% respectively. Overall, and between both sites, New Lands Farm made 21% more ethnic crops available in low-income neighborhoods, exclusively counting produce sold collectively.
Limited supply of some of the targeted ethnic crops due to the drought reduced the amount that could have been sold. Most notably, in 2015 West Springfield farmers were able to sell 368 bunches of collards, but in 2016 were often unable to fill orders for collards and as a result were only able to sell 212 bunches. The quantity of shell beans sold in 2016 in West Springfield did increase by 30 pounds, but could have been an estimated 400 pounds higher (based on order requests). Most of this lost opportunity is due to crop failure, though some is also a result of underestimating demand in the crop plan.
The above numbers do not include independent sales. Unfortunately, farmers still haven't been convinced to keep accurate records of independent sales. The best estimates we have are just that—estimates. The farm saw the most growth in independent sales among the Nepali farmers. One farmer estimated that he sold $250 per week at the height of the season in a local Nepali neighborhood. Two other (skilled) farmers barely had any vegetables to offer for the group wholesale harvest as a result of selling so much independently. Since farmers are changed a 20% marketing fee for vegetables sold through the program versus none for independent sales, there is a strong incentive for farmers to market on their own.
Farmers trialed three new crops this season: taro leaves, áji dulce, and white oyster mushrooms. Taro leaves did not seem to be an economically-viable crop in this climate, though some farmers may continue to grow them for home consumption. Áji dulce was difficult for farmers for other reasons: since none of the farmers eat it in their home cultures, there was a steep learning curve and less motivation to grow it well. All of the white oysters were kept for home consumption this season, but farmers are highly interested in growing them on a larger scale for sale in the future.

Beneficiaries:

Specialty crop beneficiaries of the project include:

- Consumers of specialty ethnic crops in Central and Western Massachusetts, especially in areas of socially disadvantaged and/or minority communities, which we estimate to be

11,884. Of this, 61% are estimated to be low-income (see table below). This includes direct consumers at the new farmer run market stand at City Soul Farmers Market and consumers at the Black Seed Farmer Market in Worcester which we supplied wholesale ethnic crops each week.

- Refugee and immigrant farmers enrolled in the New Lands Farm program: 31 in West Springfield and 24 in Worcester, for a total of 55 farmers who received training and technical assistance in growing and selling ethnic crops and received access to distribution channels to increase sales of ethnic crops.
- Three new retailers: Taste of Asia Market in Burlington, VT, Black Seed Farmers' Market in Worcester, MA and Bella Villa in Agawam, MA all had the opportunity to offer customers local specialty ethnic crops in demand because if its uniqueness and freshness and separate from what is available at terminal markets in Boston. Their buying power increased, and the potential to conduct business transactions in in their first language and according to their cultural practices also increased.

Estimated Direct Consumers for New Lands Farm, 2016

Location	Total Estimated Consumers	*Low -income Consumer
Go Fresh Mobile Market Springfield, MA	3,804	2,663
**City Soul Farmers Market Springfield, MA (farmer run)	300	270
Main South Farmers Market Worcester, MA	1,580	995
Regional Environmental Council Mobile Market Worcester, MA	5,400	3,240
**Black Seed Farmers Market Worcester, MA	800	112
Totals	**11,884**	**7,280**

**low-income is based off sales data indicating % of payments using subsidized forms of payment such as SNAP, Senior and WIC Coupons at each location.*
***New ethnic crop locations for 2016*

Lessons Learned

Problems and Delays:

City Soul Market: After researching the possibility of opening a new farmers' market, and exiting farmers' markets for their potential to reach low-income specialty ethnic crop consumers and the costs associated with each, staff settled on opening a new market stand at the Mason Square Farmers' Market in Springfield. The market was located in a poor, diverse, urban neighborhood and in the parking lot of a health center which many refugees use. The market was also already established, with established customers.

Unfortunately, a month before the market season, the market manager decided to close the market. The Springfield Food Policy Council, Gardening the Community, and New Lands Farm worked together to start a new market down the road, called "City Soul Farmers' Market." As we were not allowed to run the market in the same location, it took old customers time to find the new market, and we're sure many never did. We also lost direct access to the foot traffic to the health center.

With time we believe the market will gain traction, and reach a vast number of low-income consumers. However, for this first season this reduced the number of low-income specialty ethnic crop consumers we reached. And as a result of low sales volumes, farmers were less invested in the market and were less willing to bring vegetables to market (anecdotally independent sales increased instead).

The second City Soul market problem we faced was with the farmers who were learning to run the market stand. One farmer came down with a severe illness that kept him from the farm and market all season. The second farmer continued learning how to run the market stand, but had to stop in September for family reasons.

Early Finalization of the Project:

After receiving news of two consecutive grant proposal denials in the same fiscal year, Ascentria Community Service leadership informed New Lands Farm program staff of the pending program discontinuation set for the end of the calendar year. Previous to these grant denials, New Lands Farm suffered the loss of a different USDA grant which prompted serious reflection and lengthy discussions about the program's long-term viability, its alignment with Ascentria's emerging business model, and over-dependence on government funding. Despite our most concerted efforts, staff and leadership were unable to find new funding streams or a new program design that would be self-sustaining. Consequently, staff are halting any future work on the "Accessibility and Distribution of Specialty Crops to Socially Disadvantaged and Minority Populations" project. An official organization letter signed by the president and CEO of Ascentria was submitted with this final report.

Staff used October to finish assisting farmers sell produce and collect data for this final report. Because our project timeframe was cut short by an entire year, we did not securely establish the farmer run market stand as envisioned in the grant proposal. Beyond this we met our other deliverable, including developing and implementing curriculum for 55 farmers to improve marketing skills and financial literacy, adding two new retail accounts for specialty ethnic crops, and increasing the volume and diversity of local, ethnic produce made available for purchase by approximately 11,884 consumers, including 7,280 socially disadvantaged and/or minority consumers specifically in western and central MA in the 2016 growing season.

Lessons Learned:

Selling independently to wholesale accounts was far more attainable for low-literacy farmers than previously thought. We have decided to share the wholesale curriculum with our networks (in addition to the financial literacy curriculum) to make it available to other organizations as well.

Farmers from disadvantaged backgrounds are particularly averse to seeing produce go to waste. We would recommend other programs working with these farmers to have better systems to preserve crop freshness at market, so that any leftovers are still as marketable (or desirable for home consumption) as when they first arrived at market.

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Organization:

Cape Cod Cranberry Growers' Association

Project Title:

Emerging Virus Diseases in Cranberries: An Opportunity for Capacity Building in Pathogen Detection and Diagnostics

Project Summary:

Cranberry agriculture is the largest food commodity production activity in Massachusetts. Today, growers face serious challenges to sustainability, including low commodity prices and emerging and re-emerging plant diseases.

In 2014, Tobacco Streak Virus (TSV) and Blueberry Shock Virus (BlShV) were reported for the first time in Massachusetts. Both viruses are relatively new diseases in the cranberry industry and details about their transmission, impact on yield, and prevalence in our state are currently unknown. Moreover, viruses can spread through propagation plant material and management relies on pathogen detection and plant material screening. Currently, there are no statewide disease monitoring or detection programs focused on cranberry planting stock.

In addition to plant viruses, cranberry production is continuously threatened by fruit rot caused by fungal pathogens. Cranberry fruit rot is an important and complex disease, composed by at least 15 different fungal species. If left untreated, this disease can cause over 50% crop losses in any given year. Chemical management, multiple fungicide applications throughout the growing season, is the primary disease management strategy against cranberry fruit rot.

Disease diagnostics and timely pathogen detection is critical to avoid, and properly manage, plant diseases. Traditional diagnostic methods can be labor-intensive and time-consuming. For example, identification of plant pathogens using cultural methods may take over three weeks. In contrast, serological and molecular methods may yield results in less than a week. Additionally, several cranberry pathogens such as plant viruses cannot be detected using traditional diagnostic methods.

This project was a partnership between Cape Cod Cranberry Growers' Association and the UMass Cranberry Station to build capacity and improve cranberry pathogen diagnostics. This project will allow growers to obtain accurate diagnoses that will help them make appropriate disease management decisions in a timely manner.

Project Approach:

Develop capacity for diagnostics for two new viruses (TSV and BlShV).

The UMass Cranberry Station has traditionally offered diagnostic services to MA cranberry growers. Before 2016, the Cranberry Station was not equipped to diagnose viral diseases or implement serological-based and molecular diagnostic methods for several major cranberry

diseases. The funds obtained from this project facilitated the purchase of diagnostic equipment and reagents that will now allow virus detection and at least three more cranberry plant diseases caused by fungi, phytoplasma, and oomycete pathogens.

In June 2016, plant virus symptoms were observed for the first time during the growing season in multiple MA bogs. Plant pathology lab members and other UMass Cranberry Station personnel collected plant material consisting of uprights and fruit during grower and experimental field site visits from the beginning of June to the end of September 2016. Additional samples were collected from 20 locations where the viruses, TSV or BlShV, had been previously confirmed.

In 2017 and 2018, over 150 plant samples were processed for virus detection at the UMass Cranberry Station. Altogether, these samples included the **eight most common cranberry varieties cultivated in MA and represented over 400 acres** in the state.

In addition to cranberry samples, common weeds found in commercial cranberry beds were included in the virus screening. The purpose of testing other plant species, was to determine whether weeds could serve as potential sources of infection or virus reservoirs. By expanding this screening, we could shed some light into the disease cycles of viruses and other pathogens, which are still poorly understood in cranberry cropping systems. Although there is no conclusive data, one of the most interesting findings of this study was the detection of TSV in dodder, a parasitic weed of cranberry commonly found in MA. Dodder is known to transmit virus diseases in other crops, but it had never been reported in cranberry. The virus was detected on dodder plant material collected from symptomatic cranberry vines in 2017 and dodder seed collected in 2016. The implications of these findings could significantly impact our study approach to weed and disease management in cranberry production. For this reason, the virus screening was expanded in 2018 to include six weed species collected from cranberry beds. Although none of the weeds tested were positive for TSV or BlShV, the sample collection was limited to a few number of beds, and the Station will continue to investigate weeds as potential disease reservoirs.

Establish the foundation for a disease-free certification for cranberry planting material.

In general, plant viruses are not easily diagnosed based on symptoms. In the case of TSV and BlShV on cranberry, symptoms may be identical and it is not possible to identify the causal agent based on a visual diagnosis. Moreover, TSV and BlShV can be symptomless and as a result, it could be spread unintentionally by using infected propagation material from diseased cranberry beds.

In 2017, asymptomatic cranberry uprights were collected and tested for the presence of TSV and BlShV. The UMass Cranberry Station screened 105 uprights from at least 25 different cranberry beds throughout MA. Results from this screening showed that approximately 4% of the uprights were infected with TSV and BlShV. None of the uprights or beds were infected with both viruses, but TSV and BlShV were found in the same number of beds sampled. This could suggest that both diseases are prevalent and widespread in our state and that research and virus detection efforts should include both diseases.

Streamline diagnostics for fruit rot pathogens by developing/introducing molecular techniques for rapid pathogen detection.

This objective was set back in 2017 due to the withdrawal of Dr. Erika Saalau Rojas, the extension plant pathologist at UMass, from this project. Although Dr. Saalau Rojas was able to provide some guidance for the remaining objectives of this project, the Cranberry Station had limited staff to develop molecular diagnostics methods to identify cranberry fruit rot pathogens. However, in 2018 the Cranberry Station offered diagnostic services for a third cranberry disease, Phytophthora runner and root rot. This is a major cranberry disease in our region that can be difficult to identify with traditional diagnostic methods. The pathogen identification process can take up to three weeks, but by including this service at the Station, growers are now able to **receive a diagnosis and management recommendations in 1 to 2 days.**

The UMass Cranberry Station recently hired a new extension plant pathologist who will be able to continue the research and diagnostic efforts to improve disease identification and management for cranberry growers. As initially proposed, this project was intended to lay the foundation for self-sustaining diagnostic program. With the equipment purchased for this project, the new pathologist and other researchers at the Station will be able to continue to provide diagnostic services to cranberry growers at a minimal cost, by covering only the reagent and labor expenses associated with serological and molecular diagnostic assays.

Provide MA cranberry growers to no-cost or low-cost disease diagnostics.

Grower outreach and education efforts began in Year 1 of this project. In July 2016, the UMass Cranberry Station Newsletter included an article promoting sample submission by growers for virus testing and diagnosis at no cost. The UMass Cranberry Station letter is distributed to more than 200 in hard copy and digital form. In addition, multiple social media posts via Facebook and Twitter included plant disease symptoms pictures and instructions for sample submission. On August 17, 2016, the UMass Cranberry Station plant pathologist, Dr. Erika Saalau Rojas, attended and staffed a ‘show and tell’ table at the CCCGA annual meeting to display virus symptoms on cranberry fruit and promote grower sample submission. This meeting was attended by over 300 growers.

In 2017 and 2018, sample submission was advertised through CCCGA and UMass Cranberry Station extension and communication resources. Additionally, two talks focusing on TSV and BlShV were presented at both grower meetings organized by CCCGA and UMass Cranberry Station.

Goals and Outcomes Achieved:

The overall goal of this project was to enhance the sustainability and viability of MA Cranberry growers by i) providing accurate and timely diagnosis of cranberry plant pathogens, ii) increasing the scope and accuracy of detection of cranberry pathogens, and iii) responsiveness to emerging and existing diseases on cranberry. We strongly believe that the outcomes of this project greatly contributed to this goal. This project enabled the Cranberry

Station to diagnose plant viruses. Prior to this project, virus diagnostics were limited and samples had to be sent to private laboratories outside of MA. By adding the proper equipment to implement serological and molecular-based diagnostic methods, the scope and accuracy of cranberry pathogen detection has been significantly increased. Additionally, adding these diagnostic platforms will enable UMass Cranberry to expand their research approaches and develop programs that rely on molecular methods to better understand cranberry pathogens.

The proposed performance measure for Year 1 and Year 2 of the project are listed below, with a summary of the activities and outcomes achieved.

- At least 150 growers have access to serological-based diagnostic testing (ELISA) for two new cranberry viruses reported in MA, TSV and BlShV.

  In both years of this project, sample submission was advertised and encouraged using all communication channels available through the UMass Cranberry Station and CCCGA (list newsletter, websites, meetings here). During Year one, very few growers submitted samples at the Station, but 60 samples were collected and processed for the presence of both viruses.

- A survey screening of over 300 plant material samples (minimum of 2 per grower) using ELISA helps determine the distribution and prevalence of TSV and BlShV in MA.

  Sampling efforts did not reach 300 plant, material samples. However, in Years 1, 2 and during 2018, over 150 samples representing at least 500 acres MA were processed and tested for the virus. Common weed species were also screened for TSV and BlShV. An important weed in cranberry production, dodder, tested positive for TSV, suggesting a potential to act as a disease reservoir. In 2018, at least 6 other weed species were included in the screening.

- Additional serological-based viral diagnostics are provided to 50 growers at no-cost.

  In 2018, a third assay to detect an important soilborne pathogen, Phytophthora runner and root rot was developed. At least 6 different growers submitted samples for diagnosis for this disease.

- Molecular-based methods are developed to expand screening of plant material and incorporate methods for detection of at least two more viral diseases reported in cranberry.

  With the unexpected departure of the extension plant pathologist from the UMass Cranberry Station, this outcome was not achieved but is expected to be completed as the new pathologist has just started at the UMass Cranberry Station.

- Preliminary molecular-based detection methods are developed for 2 to 4 major fruit rot fungal pathogens. These methods are tested on up to 50 grower-provided samples.

With the unexpected departure of the extension plant pathologist from the UMass Cranberry Station, this outcome was not achieved but is expected to be completed as the new pathologist has just started at the UMass Cranberry Station.

Beneficiaries:

The primary beneficiaries of this project are the ~400 cranberry growers in MA. Any or all may benefit from this project by having access to accurate and timely diagnostic services that in the short-term will help them make sound disease management decisions and invest in disease-free planting material.

It is estimated that throughout this project, over 25 growers have directly benefitted of no-cost sample testing to diagnose plant health problems. We anticipate that the methods developed in this project will allow the Cranberry Station to significantly increase the accuracy and scope of disease diagnostics, in addition to now being able to process a much higher volume of sampling. All Massachusetts growers will now be able to attain the services achieved through this grant, enabling them to become more efficient, resilient and sustainable.

Virus diagnostic services are available through private laboratories at a cost of $95 to $125 per sample. By processing over 200 samples in house, this could potentially mean savings of $19,000 to $25,000. Also, by providing no-cost diagnostics, growers will be motivated to submit samples which will allow the Station to better understand, monitor and detect plant diseases that could threaten our region. Getting ahead of these pathogens is critical to understanding their biology and determining ways to combat them, prior to their getting a foothold in the area. With a proactive pathogen detection and management program, the growers will be able to reduce future chemical applications and increase efficiencies and yield.

Lessons Learned

Overall, this grant project has been a tremendous success in establishing Massachusetts' first and only molecular-based screening program for cranberries. Early detection that is quick and low-cost is a significant benefit to the cranberry growers of Massachusetts. These same techniques can now be utilized by other cranberry researchers in other states, not to mention the possibility of use in other crops.

One of the significant setbacks was the unexpected departure of the UMass Cranberry Station pathologist during the study period. To her and UMass' credit, they were able to keep the project going as best possible, utilizing whatever resources might be available and working on personal time to achieve the target goals. With only one pathologist in the Massachusetts cranberry industry, such a departure is not typical and cannot be predicted. However, it did slow down progress bot with advancing the diagnostic work in developing the protocols but also in running samples due to the expertise required in analysis. This setback does show that through teamwork and understanding, this can be overcome and a program developed that is relatively turn-key for the replacement pathologist to execute.

Another unexpected outcome was the ability to test weed species as possible disease carriers. Once a comfort-level was attained with the serological equipment, the ability to sample weed species for disease was achieved. This dramatically increases the vantage point of disease in

cranberry production, looking beyond the berries and the cranberry vines themselves. Although weeds in and of themselves are problematic to a working bog, if they are also harboring diseases that could affect the cranberries, they're relevance only increases. It also helps to bring a more holistic approach to pest management.

Lastly, developing a detection method for phytophora root rot was not expected. Again, once a comfort level with the equipment was established, adding a protocol for root disease was within sight. This now can help identify problems beneath the surface and before signs are noticeable to the human eye. Maintaining intellectual curiosity and looking for opportunities to proactively manage pathogens will help drive this, and any industry, forward utilizing progressive scientific approaches to pest management. This will increase the value of the crop, increase on-farm efficiencies and help lessen agricultural inputs.

Contact Person

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Additional Information

Erika Saalau-Rojas, pathologist, presented her findings on this research at the 2018 Winter Meeting before 300 cranberry growers. An advertisement for the Virus Identification Program was also included in CCCGA's monthly newsletter, *The Bogside*. Attached are the agenda from the Winter Meeting and a page from *The Bogside*, August 2018.

Organization:
Community Involved in Sustaining Agriculture, Inc. (CISA)

Project Title:
Enhancing Wholesale Specialty Crops' Competitiveness with Local Branding

Project Summary:
This project helped wholesale specialty crop producers build a consumer identity as a local farm, while maintaining their efficient wholesale marketing models. Wholesale specialty producers sell in a very competitive marketplace, and have little experience communicating with the end consumer. Local branding, name recognition, and customer loyalty can facilitate ease of marketing and boost sales for these growers and reaches consumers at a time of high interest in local foods. This project was inspired by suggestions from growers and buyers participating in CISA's previous specialty crop block grant work, which was designed to educate press and buyers about specialty crop producers and products to increase sales and consumption of local specialty crops. As a result of that work, growers and buyers brainstormed additional strategies that they believe can help consumers develop a connection with and loyalty to local specialty crops, such as: PLU labels for wholesale produce that link to farm information and ways to learn more; wholesale producer websites with consumer-friendly content; and support for wholesale producers who want to develop and maintain consumer content. This grant allowed CISA to implement these strategies with specialty producers, thus facilitating marketing and improving consumer awareness of specialty crops from Massachusetts farms.

By providing farmers with support to invest in labeling, signage, and on-line communications, this project helped end consumers who buy specialty crops at retail outlets or institutions gain a connection and loyalty to the farm and increased sales of local specialty crops.

Project Approach:
We officially started this work in November 2015 and completed the grant in September 2018. Our primary goal was to increase competitiveness of western Massachusetts specialty crops sold via wholesale channels. Our objectives in this project were to 1) **increase consumer awareness about local specialty crops. 2) increase wholesale farmers' ability to maintain consumer-friendly outreach and content and 3) increase sales of specialty crops.**

During this grant period, CISA worked with both specialty crop farmers and buyers. We worked with 5 farmers on testing out new printed point of purchase materials that linked their wholesale product with more information about the farm, three farms on design of point of purchase materials, supported six farms in implementing improvements to their on-line presence, and reached 21 farmers through our workshop on consumer-oriented communications. In addition, we worked with restaurants and retailers to directly support them in developing new purchasing relationships with farmers through one-on-one phone calls and a wholesale guide that directed farmers to specialty crop producers who could become vendors.

We originally proposed working with three farms in developing PLU materials, printing them, and making website improvements. Many farms did not need the complete package and by being

flexible about the format of point of purchase materials (some farms preferred labels, shelf talkers, or elastic tags) and decoupling the web work from the printing, we were able to work with 6 farms on point of purchase material development. We also worked with six farms in supporting their website improvements, exceeding our original goal of three farms. Twenty-one specialty crop farmers attended our workshop, exceeding our goal by one.

As a result of this work, specialty crop wholesale farms had direct support in implementing improvements to their end-consumer communications and worked more closely with CISA staff, allowing us to better understand the individual businesses and their needs so that we can connect them to other resources and plan future support. Also specialty crop producers said that buyers appreciated the marketing value of the farm's branded product and that that resulted in increased sales (one farm reported increasing their wholesale sales by 50% after implementing point of purchase improvements such as twist ties and branded boxes).

Non-specialty crop producers did attend our workshops, however their participation was off-set by matching and in-kind support. The wholesale guide included specialty crops and non-specialty products, but funding from this grant only covered the staff and printing costs of the specialty crops sections of the guide. Otherwise, all activities solely benefited specialty-crop producers.

Project partners played important roles in supporting outreach about the opportunity to work with CISA and consultants played a critical role in providing farmers with direct support in design and printing.

Goals and Outcomes Achieved:

Goals	Performance Measure/Benchmark	Activities Performed	Results achieved
Increase consumer knowledge about local specialty crop producers.	Number of consumers that respond to new communication methods, including the number of click-throughs from point of purchase or PLU materials and the number of page-views, Facebook likes, or twitter followers for producer's new content. Most wholesale specialty crop producers do not currently	CISA worked with 7 farms on point of purchase materials and with 6 farms on website development implementation- both of which were designed to increase knowledge of end consumer. Our wholesale guide included profiles of specialty crop producers for	Much of this work happened in the last 6 months of the grant with our amendment- therefore we are still collecting data for the 2018 season from growers, however one grower who invested in website work saw a 50% increase in web traffic. And one farm reported a 50% increase in wholesale sales!

	communicate directly with the end consumer of products they sell through wholesale channels. Thus, the benchmark is very low. We will collect benchmark data for each specialty crop producer with whom we work directly.	restaurants and retailers to use in their own outreach to consumers.	
Increase specialty crop producers' ability and capacity to communicate to end consumers.	Number of growers that invest in additional website or social media communications aimed at the end consumer. Few specialty crop producers communicate directly with the end consumers of product they sell through wholesale channels. Thus, the benchmark is very low. We will collect benchmark data for each specialty crop producer with whom we work directly.	CISA held a workshop for specialty crop producers on communicating with the end-consumer and worked directly with six wholesale specialty crop farmers on implementing website improvements.	1) Twenty 21 farmers who sell specialty crops were trained to develop and maintain consumer friendly content through a workshop. 2) Six wholesale specialty crop farmers implemented new consumer-friendly outreach strategies (double our original goal of three) by investing in improvements to their website.
Increase sales for local specialty crops.	Number of buyers who add or increase purchase of local specialty crops. Four buyers who filled out CISA's year-end survey mentioned that they were interested in purchasing more specialty crops from MA than they were. Total number of	CISA worked with restaurants and retailers to provide them with information about specialty crop producers including: *one-on-one phone calls *a print/digital wholesale guide *profiles about	Six restaurants and retailers said they would add or expand purchase of local specialty crops in 2018, we will follow up with these businesses in early 2019 to assess actual changes. Eleven restaurants and

	retailers in the Local Hero campaign is 40 in 2015.	specialty crop producers for use in communications to their end consumer.	five new Local Hero retailers join the campaign (our goal was three).

Beneficiaries:

Beneficiaries will primarily be producers who grow fruits and vegetables, though we will also reach growers of other specialty crops, including honey and syrup. Participation in this project will occurred at three levels: first, we worked directly with thirteen specialty crop growers on point of purchase/PLU materials and website or social media content. Second, we held a workshop for 21 specialty crop growers to share guidance on communicating to the end consumer.

Finally, buyers of specialty crops and customers who shop at retail venues or eat at restaurants benefited from the increase in awareness and availability of specialty crops.

Lessons Learned

Wholesale specialty crop farmers, like farmers across our region, are interested in diversifying their markets. We therefore saw that many of the traditional wholesale farmers we worked with wanted to round out their wholesale business with direct on-line sales additions and other website improvements, whereas traditionally direct-market farmers who have recently added wholesale needed more support in developing point of purchase materials and less support in website communications. One farmer said: “As a wholesaler, if one of my customers sees a plant with my logo on it in a store and goes on the website, hopefully that leads them to purchase something on the website, or in their retail store.”

Investments in point of purchase improvements had the added benefit of helping wholesale buyers’ market specialty the farm’s specialty crops, thus increasing sales! One farm said that their wholesale sales increased 50% after the new point of purchase investment they reported that both distributors and small grocers and restaurants “love” the new branded materials and really appreciate the transparency. One distributor, Myer’s Produce, loves to post pictures of their branded boxes on Instagram for their followers.

We saw through this project that the lines between wholesale and direct market farmers continue to blur and our outreach to farmers about this opportunity was a valuable way to share with them the many ways that CISA’s technical assistance programming could be of assistance.

Contact Person

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Additional Information

Wholesale guide with profiles:
http://www.buylocalfood.org/upload/resource/Pioneer.Valley.Wholesale.Guide.pdf

Organization:
Groundwork Lawrence

Project Title:
Increasing Nutrition Knowledge and Specialty Crop Consumption in Lawrence

Project Summary:
Lawrence's lack of a diverse, competitive marketplace – especially the presence of safe, well-stocked supermarkets has created a local "food swamp." Lawrencians rely on bodegas (corner stores) for their shopping needs, but these have historically only stocked culturally relevant, non-perishable processed foods. Fresh fruits and vegetables are harder to find and are perceived as more expensive to purchase than processed or fast foods. Our project supported efforts to increase Lawrence resident's awareness of the beneficial role that a diet based on fresh produce plays in public health, the actual cost of regionally-sourced specialty crops, and of existing and new, regionally-sourced, specialty crop produce purchase locations in the city. Through the use of cooking classes, produce tastings, tours and an outreach campaign, we increased regional fresh produce sales and encouraged the collaboration between regional farmers and local bodegas.

Project Approach:
Lawrence is home to 80,231 residents, and is one of the poorest cities in New England. According to 2010 US Census data, 29% of residents are living below the poverty level, 47% are below the age of 25 and 74% are Latino. One in 7 families receives SNAP (food stamps) though hundreds more qualify and 89% of school children are eligible for free or reduced-price meals. Lawrence's high rate of familial poverty severely limits how much fresh food, and the overall quality of food, families are able to buy. Lawrence lacks marketplaces with fresh food and lacks information on how to purchase fresh food in an affordable way which contributes to the number of people with Type II Diabetes (14.4%) and the amount of children living with childhood obesity (44.6%).

Through our Healthy Food Access Programs, GWL works in partnership with regional farmers, educators and the City of Lawrence, to increase healthy food access and to provide nutrition education that helps the City's mainly Latino immigrants culturally adapt to New England's growing season and harvest and create a more direct link between regional farms and consumers. We increase healthy food access by providing and promoting fresh produce purchasing locations, by creating, promoting and supporting fresh produce subsidy and incentive instruments and by providing safe-soil growing spaces. In addition to managing three GWL Farmers Market locations for regional farmers, we partner with Farmer Dave of Brox Farm to promote his Lawrence CSA site and to make the CSA more affordable for low-income Lawrence residents. We employ Lawrence high-school youth as part of our Green Team program to cultivate produce at Costello Urban Farm, located right in Lawrence, which they sell at the GWL Farmers Markets, local restaurants and other local sites and donate surplus harvest to Bread and Roses Soup Kitchen in Lawrence.

GWL began partnering with the City of Lawrence Mayor's Health Task Force at the beginning

of this grant through a project funded by Lawrence General Hospital to certify 10 bodegas as S.A.L.S.A.-certified, and they will begin selling healthier foods, including fresh produce, and increasing their healthy food offerings. As of December 30th of 2016 our number of engaged bodegas is now up to 18 city-wide. This process requires that bodegas sign a Memorandum of Understanding (MOU) with the City and agree to: 1) stock fresh/frozen/canned fruits and vegetables; 2) stock healthier products (e.g. whole wheat bread, skim milk); 3) display S.A.L.S.A. marketing materials; 4) maintain store cleanliness; 5) partake in Technical Assistance/Small Business Training opportunities; and 6) accept SNAP/WIC (food stamps).

In partnership with Lawrence Public Schools (LPS), GWL engages over 1,400 elementary/middle and high school LPS students each year with healthy living programming that teaches the fundamentals of a healthy diet rich in fresh produce through hands-on, seed-to harvest, schoolyard gardening curriculum. GWL has just completed the building of a learning kitchen which will better equip us to meet the growing demand for cooking and nutrition classes in the community. At this critical point in the S.A.L.S.A. campaign, and with GWL's learning kitchen just recently completed, it has been important to promote fresh produce sale points to help tip the scale of the city's culture toward one of healthy living which is sustained by regional agriculture. Our USDA project was perfectly timed to leverage these initiatives and developments for the promotion of specialty crops, specifically, regionally grown fruits and vegetables

Project Activities

The "Increasing Nutrition Knowledge and Specialty Crop Consumption in Lawrence project followed an outline of activities which were accomplished by 4/27/17 and are detailed below:

- Designed/printed sets of recipe booklets which call for fruits and vegetables grown in New England with 6 recipes along with brochures for all events and community outreach.
- Created and distributed a brochure that highlights locations in Lawrence where regionally-sourced fruits and vegetables can be purchased directly or used in meal preparation. This brochure includes name, location, contact information, logo and website for each venue as well as the original source farm.
- Outreach to distribute the recipe cards and brochure to at least 5,000 residents through the following venues: GWL Farmers Markets, Farmer Dave's Lawrence CSA site, GWL's Healthy Living Program events, GWL tabling events, the MHTF partner network, to students and their families via GWL's partnership with LPS, Lawrence Senior Center, LPS Family Resource Center, and Si Se Puede.
- Staff conducted a social media campaign to promote regionally-sourced produce purchase points. Our community engagement team worked to promote this not only on our organization's Facebook page but also on the "We Are Lawrence" website.
- Staff provided tours of regionally-sourced specialty crops at the GWL farmers markets. Demand became so high for tours that the total number of tours was bumped to 13 and so far have engaged over 215 people.
- Reached out to S.A.L.S.A certified bodegas and local restaurants to encourage the purchase of regionally-sourced specialty crops during the harvest season and facilitated conversations with regional farmers. Currently we have 19 S.A.L.S.A certified bodegas

and of those, 13 are participating in sourcing local food for their markets. We plan to engage another 10 bodegas by the end of 2017.

- Began development of new cooking classes to be held in GWL's learning kitchen.
- Delivered cooking/preservation classes and used them to promote regionally-sourced specialty crops. Staff conducted 5 total workshops with 72 participants including 2 at the Arlington Elementary School for parents, 2 Open Community Classes at the senior center and 1 class at the Adult Learning Center. In addition we held 3 workshops on different preservation topics including canning, freezing and drying which had an additional 24 participants. Our cooking club had 3 sessions with 60 participants. Our healthy Latin Cooking Class and Preservation classes have been huge successes and prompted increased demand from the community. We currently have community members on an internal waiting list, and additional waiting lists from the Greater Lawrence Family Health Center, Adult Learning Center, Arlington Elementary School (classes for parents), Lawrence Community Works and the community at large who learn of our classes at events.
- Distributed 200 recipe cards at various community outreach events which have highlighted locally grown vegetables such as kabocha squash, hubbard squash, butternut squash, kale, eggplant, radishes, beets, garlic, pinto beans, jalapenos, carrots, corn, tomatoes, cilantro, onions, peppers and apples.
- Provided 10 free fruit/vegetable tastings at GWL Farmers Markets for at least 400 people with the help of UMass Extension Amherst as well as weekly tastings at LPS during scheduled enrichment time.
- Measured the effectiveness of the program, highlighted improvements and next steps. During this process we have collected data points in order to figure out which of our programs are working for our residents and which need additional support. All of our programs thus far have proven to be in high demand in the community. (See delays section for information about continued need). As demonstrated in the list above, our accomplishments were consistent with our stated goals and benchmarks in our work plan. Our project partners during our grant period have proved invaluable as they have supported our efforts in increasing the local knowledge and usage of specialty crops. The Mayor's Health Task Force has partnered with GWL in order to put specialty crops into local bodegas and provide incentives for bodega owners and have also assisted with the distribution of brochures and recipe booklets at various community events since the beginning of this grant. Lawrence Public Schools has provided weekly opportunities for GWL educators to enter the classroom and allow for specialty crop tastings during enrichment programming. In addition, "Share Our Strength" has partnered with Groundwork Lawrence to deliver 5 Cooking Matters workshops thus far in the grant period with plans for more moving forward due to the demand.

Our Expected Measurable Outcomes identified in Attachment B: Work Plan were met by programming staff on a daily basis through the completion of the above stated tasks. Additional measurable outcomes as stated above were monitored by program staff in a comprehensive spreadsheet to determine the number of classes, participants, demonstrations, tours, recipe cards, brochures and local bodega owners which show progress towards our overall goals of raising

Lawrence resident's awareness and consumption of specialty crops, raising resident's awareness of where to purchase items, and bolstering the regional agricultural economy.

Goals and Outcomes Achieved:

Short-Term Outcomes:
Our short term outcomes from the 2015 harvest year into the 2016 harvest year were to produce a 5% (min) increase in fresh produce sales at the Lawrence CSA and produce a 5% (min) increase in revenue and foot traffic at all 3 GWL Farmers Markets in addition to all of the stated activities above.

Our Short-Term goals were met and well exceeded. During the 2016 Farmers Market season we experienced a 57% increase in gross sales at our three farmers markets from $52,594.27 in revenue in 2015 to $82,906.43 in revenue in 2016 – more than doubling EBT/SNAP/Food Stamp sales as well as more than doubling our farmers' market coupon redemption rate. At our farmers markets we also saw an increase in foot traffic from 8,829 people in 2015 to 10,805 in 2016 which is a 22% increase overall. In addition we provided $7,430 in subsidies through the Lawrence CSA which supported 65 shares for 27 families (spring, regular, fall, and fruit shares), up from just over 40 shares in 2015 due to increased sales at the Farmer Dave's Lawrence CSA.

Long- Term Outcomes:
Working forward with this momentum that we have achieved during our grant period, Groundwork Lawrence expects to see a statistical and qualitative improvement in the health of Lawrence residents due to increased consumption of fruit and vegetables. In addition, a continued long term outcome of this project will be an increase year over year in specialty crop sales in Lawrence which will bolster the local agricultural economy and engage additional retailers.

Beneficiaries:

Specialty Crop Beneficiaries include GWL Farmers Market farmers, other regional farmers, Lawrence CSA farmer (Farmer Dave), GWL's Green Team youth farmers and the Lawrence community who have gained increased access to affordable fresh fruits and vegetables.

Beneficiary	Amount of People
Regional Farmers	4
Green Team Youth	50
Local Farm Employees	25
S.A.L.S.A certified bodegas owners	19
Cooking Class Participants	156

Lessons Learned

Farmer's Market Marketing Strategy: During the 2016 Farmers Market season, Groundwork

Lawrence noticed that by changing the wording on signage and notifications for farmers' market discounts such as EBT and farmers market coupons, we could change the amount of redemption. We changed the words from "double your matching dollars," to "50% off" which created a new impetus for shoppers to utilize our discounts.

Enhanced Communication through Social Media: In addition to passing out the brochures that we created which contain locations to purchase regionally sourced food, we also began to promote our brochure and additional information via social media and our website. Our website has an incredible reach, with over 1,400 people viewing our Farmers Market page just this past year alone. In addition, we have a rich network of community partners that help to promote our information on their websites and social media outlets. There is no longer a barrier to reaching community members with new information and most people have smart phones. By utilizing these new technologies, we will be able to use less paper in the future, promote in a smart way via the internet and remain environmentally friendly which coincides perfectly with our mission as an organization. We found that people are more apt to read using their phones than glance at brochures. In addition, it will be our goal within this next year to have all of our healthy living documents translated into accessible Spanish language versions.

Need for Recipe Card Expansion: During this process, we learned quickly that our recipe cards were wildly popular. The cards gave community members a direct way to use healthy food in culturally relevant recipes. We only distributed 200 recipes cards, but with additional funding we could distribute additional recipe cards and booklets and expand our recipe offerings. Our partners throughout Lawrence have also indicated an interest in giving recipe cards to their constituents, which would provide even more residents with new ideas for fresh cooking.

Need for additional cooking classes: Our cooking classes, much like our recipe cards were highly sought after this year.

Contact Person

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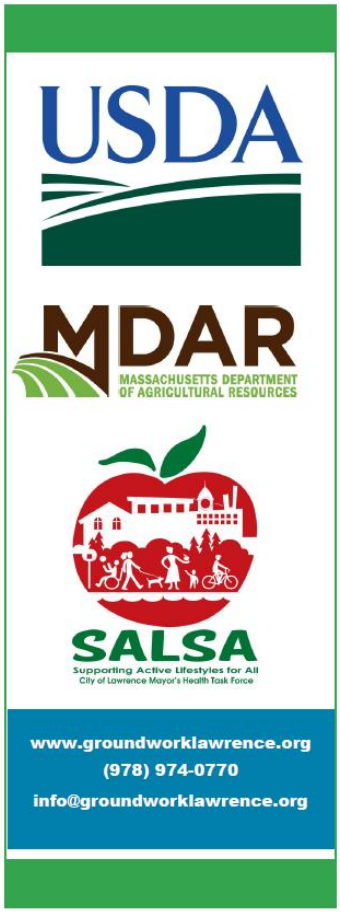
Additional Information

Funding Expended to Date
GWL has expended $20,000 out of our total $20,000 grant award to date. Project funds were fully expended by April 27, 2017.

Please see attached:

1. Brochure
2. Recipe Card
3. Farmers Market Coupon


USDA
MDAR
MASSACHUSETTS DEPARTMENT OF AGRICULTURAL RESOURCES
SALSA
Supporting Active Lifestyles for All
City of Lawrence Mayor's Health Task Force
www.groundworklawrence.org
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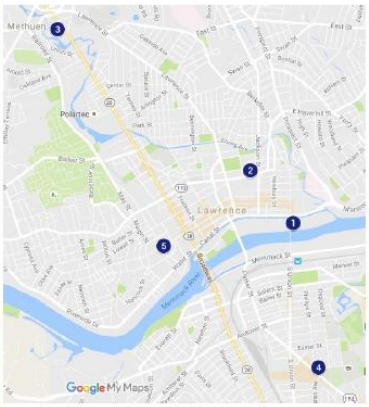
Local Food
Lawrence
This brochure highlights locations in Lawrence where regionally sourced fruits and vegetables can be purchased directly or are used in meal preparation.
GROUNDWORK
CHANGING PLACES CHANGING LIVES
GROUNDWORK
Lawrence

Local Food in Lawrence



1. Farmer Dave's Community Supported Agriculture Program
50 Island St. Lawrence, MA
Farmer Dave's CSA offers customers a full variety of local seasonal produce every week .

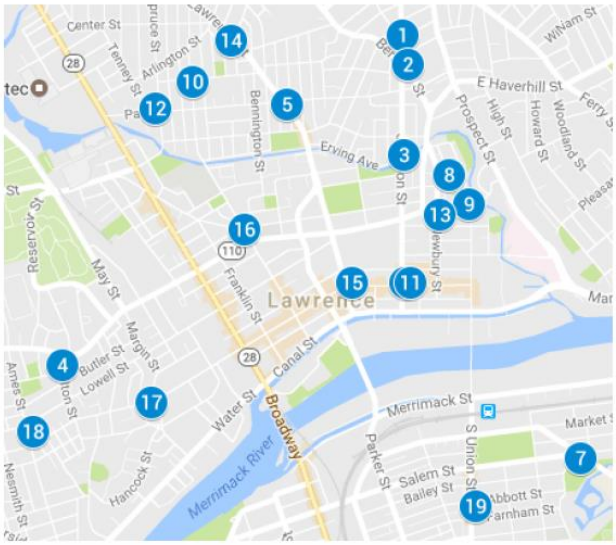
2. Wednesday Farmers' Market
Campagnone North Common across from Senior Center (155 Haverhill St. Lawrence, MA)

3. Friday Farmers' Market
254 Broadway Methuen, MA

4. Saturday Farmers' Market
Corner of North Parish Rd. and Winthrop Ave (Rt. 114), Lawrence, MA

5. Pez Dorado Restaurant
676 Essex St Lawrence, MA

Bodegas Participating in the "Healthy on the Block" Initiative



1. Amable Supermarket #1	304 Jackson St.	**11. Peralta Market**	165 Essex St.
2. Amable Supermarket #2	51A Berkeley St.	**12. Pueblo Market**	309 Park St
3. Bonanza Market	181 Jackson St.	**13. Quiles Market**	89 Newbury St.
4. Dominy Market	64 Milton St.	**14. Raquel Market**	296 Lawrence St.
5. El Mello Market	187 Lawrence St.	**15. Santiago Market**	293 Essex St.
6. Essex Street Market	175 Essex St.	**16. Santos Supermarket**	232 Hampshire St.
7. Hernandez Market	47 Loring St.	**17. Super Mas**	775 Essex St.
8. La Antillana Market	160 Union St.	**18. Towerhill Mini Mart**	99 Ames St
9. Leourys Market	101 Union St.	**19. Yaport Market**	176 South Union St.
10. Ocoa Market	461 Hampshire St.		

Ensalada de Col Rizada con Frutas y Nueces

INGREDIENTES:

2 naranjas
1 manzana
1 cebolla roja
½ taza de vinagre
1 cucharada de aceite de oliva
2 cucharadita de sal
1 pellizco de orégano
1 taza de nueces mixtas y frutas secas
2 taza de col rizada
1 un manojo pequeño de sorrel/alazán
4 rábanos pequeño
1 remolacha
1 zanahorias

INSTRUCCIONES:

Corte la manzana y la cebolla roja en trocitos pequeños; exprima una de las naranjas.

Ponga el aceite, el vinagre, la sal, el orégano y el jugo de naranja en un tazón pequeño y bátalo hasta que este suave luego añada la manzana y la cebolla roja.

Póngalo a un lado, felicidades a hecho/preparado el aderezo de la ensalada.

Valla a trabajar con los otros ingredientes lave/enjugue todos los ingredientes. Corte las hojas de col rizada y el sorrel/ alazán; luego póngalo en un tazón mediano.

Gualle los rábanos, las zanahorias y la remolacha; luego añadalos en el tazón con los demás ingredientes. Agregue el aderezo y mézclelo con una chuchara grande.

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FRUIT, NUT, KALE SALAD

INGREDIENTS:

2 oranges
1 apple
1 red onion
½ cup of vinegar
1 tbl of olive oil
1 c of mixed nuts & dry fruit
2 tsp of salt
one pinch of oregano
2 c of kale
1 small bunch of sorrel
4 small radishes
1 beet
2 carrots

DIRECTIONS:

Cut the apple and the red onion into small pieces ; wring one of the oranges.

Put the oil, vinegar, salt, oregano and the orange juice in a small bowl and whisk until smooth then add the apple and the red onion.

Put it aside, congratulations you made your salad dressing.

Wash/rinse all the other ingredients. Chop up the kale and sorrel then put them in a medium bowl.

Grate the radishes, carrots and beet then add them in the bowl with the others ingredients. Add the dressing and toss well with a big spoon.

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EGGPLANT SCRAMBLED EGGS

INGREDIENTS:

6 eggs
6 cherry tomatoes
1 small onion
1 clove of garlic
3 small green scallions
1 eggplant
a small bunch of fresh coriander (cilantro) leaves
1 tsp salt
1 c cheese
1 tbl canola or olive oil

DIRECTIONS:

Crack the eggs into a bowl and use a fork to beat the eggs well until the yolks and whites are blended and pale yellow.

Chop the scallion, onion, cilantro, garlic and tomatoes. Add the spinach, scallion, onion, cilantro, garlic tomatoes and cheese and salt mix well.

Put the skillet on the stove and turn the heat to medium. when the skillet is hot (flick some water on it: and if you see the water dance the skillet is hot), add the oil and then the eggplant. Cook it for 20-30 minutes at low heat.

Add the egg mixture and let it cook for 1-2 minutes. Start carefully flipping the eggs until they scramble.

When fully cooked, serve them with whole wheat toast or pita. Enjoy!!

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HUEVOS REVUELTOS CON BERENJENA

INGREDIENTES:

6 huevos
6 tomaticos de los pequeños
1 cebolla pequeña
1 diente de ajo
3 cebollas verdes
1 berenjena
1manojo pequeño de cilantro fresco
1 cucharadita de sal
1 taza de queso rallado
1 cucharada de aceite canola o de olivo

INSTRUCCIONES:

Romper los huevos en un tazón y con un tenedor batir la mezcla bien hasta que las yemas y claras se mezclen y se pongan amarillo pálido.

Corte la cebolla verde, cebolla, cilantro, ajo, tomates. Añada la cebolla verde, cebolla, cilantro, ajo, tomates, queso y sal y mézclelo bien.

Punga el salten en la estufa a fuego mediano. Cuando el salten este caliente (póngale un poquito de agua para probar el salten, si el agua baila esta caliente) póngale el aceite y cuando este caliente agregue la berenjena. Cocínela por 20 -30 minutos a fuego lento.

Añada la mezcla de los huevos y déjelo cocinar por 1-2 minutos. Empiécelo a mover lentamente asta que los huevos estén revueltos.

Cuando estén totalmente cocinados, sírvalo con tostada o pita de grano integral. Disfrútelo!!!

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FRESH PINTO BEANS

INGREDIENTS:

1 lb of fresh pinto beans
½ cup of cilantro
1 low sodium chicken or vegetable bouillon cube
1 clove of garlic
1 small onion
one pinch of oregano
1 ½ cups of squash
½ cup of pepper or 1 sweet pepper
1 tsp of oil
1 tsp of vinegar

DIRECTIONS:

Shell and cook fresh beans for about ½ hour on low heat.

Once cooked, add the cilantro, bouillon cube, oregano, red onion, squash, vinegar, oil and pepper.

Let them cook for an additional ½ hour.

Enjoy with rice.

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HABICHUELAS PINTAS FRESCAS

INGREDIENTES:

1 libra de habichuela fresca
½ taza de cilantro
1 cubito de pollo o vegetal bajo en sal
1 diente de ajo
1 cebolla pequeña
1 ½ taza de ahuyama
½ taza de ají o un ajicito pequeño
1 cucharada de aceite
1 cucharada de vinagre

INSTRUCCIONES:

Las habichuelas frescas; pélelas sáquelas de la baqueta, labelas y póngalas en una olla. Cocínela por ½ hora a fuego lento.

Cuando estén cocinadas, añádale el cilantro el caldo de pollo o vegetal, el orégano, la cebolla, la ahuyama, el vinagre, el aceite y el ají.

Déjelo cocinar por ½ hora mas.

Disfrútelas con arroz.

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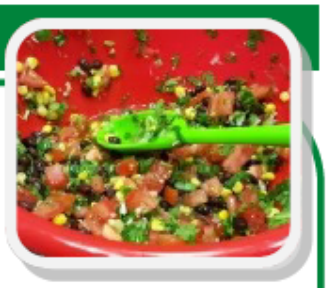
CORN, BLACK BEAN, SALSA



INGREDIENTS:

3 ripe, red tomatoes diced
4 green onions, chopped
1 can green chilies, chopped
or 1 jalapeno or yellow chili pepper
2 cloves garlic, minced
or ¼ teaspoon garlic powder
¼ cup fresh cilantro, chopped
1 teaspoon oregano, ground
1 - 15-ounce can black beans, drained
1 - 15-ounce can corn, drained or
3 cups of fresh corn

DIRECTIONS:

Wash fresh ingredients. Dice tomatoes, chop onions, mince chilies and garlic.

Combine with herbs and mix well. Stir in canned corn and black beans . Of course we recommend you use fresh corn and beans when they are in season.

Serve as a side dish, or as a dip for low-fat tortilla chips.

Use only the first 6 ingredients for a simple basic tomato salsa.

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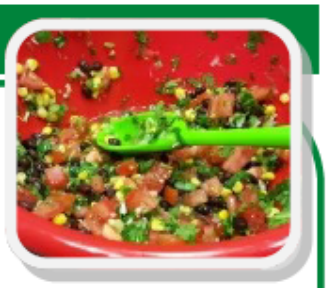
SALSA CON MAIZ Y FRIJOLES



INGREDIENTES:

3 tomates rojos, cortados en cubitos
4 cebollas verdes, picadas
1 lata de chile verde, picado
o1 jalapeño o ají amarillo
2 dientes de ajo, picados
o ¼ cucharadita de ajo en polvo
¼ taza de cilantro fresco, picado
1 cucharadita de orégano, molido
1 15-onzas de maíz, escurrido
o 3 taza de maíz fresco
1 15-onzas de frijoles negros, escurrido
1½ taza de frijoles negros cocidos

INSTRUCCIONES:

Lave los ingredientes frescos. Corte los tomates, en cuadritos, picar la cebolla, el ajo y los jalapeños.

Combinar todos los ingredientes con las hierbas mézclelo bien. Añadir el maíz y los frijoles negros enlatados o cocidos (frescos), mézclelo.

Consejos:
Servir como un plato de lado o como un baño (dip) para las totillas con poca grasa.

Utilice solo los primeros 6 ingredientes para una salsa simple de tomates.

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ARROZ INTEGRAL CON ZANAHORIA

INGREDIENTES:

1 taza de arroz integral
2 zanahorias pequeñas
2 tazas de agua
1 diente de ajo
1 ½ cucharadita de sal
1 cucharada de aceite

INSTRUCCIONES:

Lave/enjugue el arroz luego déjelo en agua por 5 minutos.

Ralle/Gualle las zanahorias.

Ponga una olla en la estufa a fuego mediano agréguele el aceite, el ajo majado, la sal y la zanahoria.

Cocínelo por 5 minutos luego agréguele el agua y el arroz y déjelo cocinar por una hora.

Disfrútelo con habichuelas, carne y ensalada o los vegetales de su preferencia.

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CARROT BROWN RICE

INGREDIENTS:

1 cup of Brown rice
2 carrots
2 cups of water
1 garlic clove
1 ½ tsp salt
1 tbl of oil

DIRECTIONS:

Wash/rinse the rice then leave it in water for 5 minutes.

Grate the carrots.

Use a pot on stove, medium heat, add the oil, then mash and add garlic, salt and the grated carrots.

Cook them for 5 minutes then add the water and the rice. let it cook for one hour.

Enjoy with beans, meat, garden salad or other favorite vegetables.

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CALABAZA CON BACALAO

INGREDIENTES:

2 libra de bacalao
2 tomates
1 pimiento/ají rojo
1 pimiento/ají verde
½ taza de aceite
2 cebollas mediana
1 diente de ajo
½ taza de cilantro (opcional)
ahuyama de kabocha

INSTRUCCIONES:

El bacalao es bien salado, usted tiene que lavarlo bien con mucha agua luego déjelo en el agua por par de minutos. Ponga una olla con agua en la estufa y déjela hervir luego añada el bacalao. Cocínelo por 20 a 30 minutos.

Saque el bacalao y póngalo en agua fría corriendo por 5 minutos.

Mientras el bacalao esta en el agua, ponga otra olla en la estufa a fuego mediano. Añada el ajo, cebolla, tomates, pimientos/ajíes y el cilantro déjelo cocinar por 1 a 2 minutos, entonces agrégale el bacalao. Cocínelo por 3 o 5 minutos.

Corte la ahuyama en 8 pedazo sáquele las semillas, lávela y póngala a hervir por 20 minutos.

Disfrútelo con arroz integral.

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KABOCHA SQUASH WITH CODFISH

INGREDIENTS:

2 pound of codfish
2 tomatoes
1 red pepper
1 green pepper
½ cup of oil
2 medium onions
1 clove of garlic
½ cup of cilantro (optional)
kabocha squash

DIRECTIONS:

The codfish is salty, you need to rinse it with water then leave in the water for a couple of minutes. Bring a pot of water to boil, then add codfish. Cook it for 20 to 30 minutes.

Take out the codfish and put it in cold running water for 5 minutes. While the fish is in the water, put another pot on the stove on medium flame. Add the garlic, onions, tomatoes, peppers and cilantro let it cook for 1 to 2 minutes, then add the codfish. Cook it for 3 to 5 minutes.

Cut the squash into 8 pieces, take seeds out, wash it, then put it in a pot of water - bring to a boil. Remove from pot, add salt and then add to dish.

Enjoy with brown rice.

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Provided by Groundwork Lawrence for GLCAC

Organization:

Massachusetts Farm to School

Project Title:

Making the Most of the Summer Harvest in School & Institution Cafeterias

Project Summary:

In this project, "Making the Most of the Summer Harvest in School & Institution Cafeterias" Mass. Farm to School sought to promote and support profitable specialty crop sales in summer food service programs and promote processing of summer-harvest specialty crops for year-round use by schools and institutions. Through a combination of individual and group training and technical assistance, this project provided specialty crop growers with the knowledge and tools to access the summer food service market and summer food service directors with the knowledge and tools to procure local specialty crops for their meal programs. In addition, we also provided training for school food service staff to purchase locally grown specialty crops at the season's peak and process them for use year round and provided culinary trainings to create winning recipes with these frozen and processed specialty crops. Utilizing our successful Mass. Harvest of the Month campaign as a tool to guide summer food service sites in which crops were available and the recipes and resources to promote these crops, we were able to enhance the competitiveness of Massachusetts-grown specialty crops in the summer and beyond.

Project Approach:

a) *A brief summary of activities performed and goals and / or targets achieved throughout the entire grant period. This should represent the activities/ goals and targets specified in Attachment B: Work Plan;*

This project took a diversified approach to the overall goal of increasing the amount of Massachusetts specialty crops purchased by schools and other institutions by increasing market access to summer food service programs and promoting in-season purchasing and preservation of specialty crops for year-round use. The approach included providing training and technical assistance to producers and buyers, as well as resource guide development.

We worked to build upon the thriving farmers markets here in Massachusetts and provide specialty crop vendors with the opportunity to increase sales to summer food service programs within the community. We encouraged summer food service programs to team up with farmers markets and make the market a meal site to feed families within their community.

This project aimed to also increase the awareness and purchase of local specialty crops harvested during the summer for processing and year round use by schools and institutions. With this goal in mind we successfully organized a culinary training opportunities to highlight the best practices for bulk purchasing and processing of specialty crops during the summer months. We also included information on the specialty crop items specifically processed and available to schools by the Western Mass. Food Processing center and conducted additional research on processing capacity for other specialty crop producers around the state.

Finally, we aimed to increase demand for local specialty crops by expanding our successful Harvest of the Month promotional campaign to additional summer food service sites and specifically engaged more non-school summer food service program sponsors.

b) If the project benefited commodities other than specialty crops, indicate how the Contractor ensured that grant funds were used only to enhance the competitiveness of specialty crops; and

All activities targeting farmers were focused on fruit and vegetable growers, thus only benefitting specialty crop producers.

c) A summary of the contributions and roles of project partners.

Our work has been greatly supported by several key partnerships. Our strong relationship with the School Nutrition Association (SNA) of Massachusetts has aided in reaching our target audience of school food service directors. SNA-Mass. has sent out e-blasts about Harvest of the Month and provided the opportunity for us to present at their semiannual conferences about opportunities to participate in Harvest of the Month during the summer months, as well as exploring opportunities of increasing local specialty crops procurement at their summer food service programs.

Similarly, strong relationships with the Mass. Department of Agricultural Resources help us reach our target audience of Massachusetts farmers. Through MDAR's outreach tools such as the monthly Farm and Market Report, we are able to advertise opportunities for farmers to sell to institutions, including specific information about selling during summer months and Harvest of the Month crops. MDAR has also been extremely helpful in reaching farmers' market managers and specialty crop producers at farmers markets across the Commonwealth. With MDAR's assistance we were able to present at the annual Farmers' Market Manager workshops, presenting on the opportunities for farmers markets to connect with summer food service sites within their communities.

The Department of Elementary and Secondary Education is an additional partner that aids in communicating with school nutrition professionals. DESE provides key contact information for summer food service site staff, and is supportive of including local specialty crops on menus of participating sites. The Western Massachusetts Food Processing Center (FPC) has also been a supportive partner in our work over the past sixteen months. Our partnership has allowed the FPC to connect with additional food service programs and MFTS has promoted their year round local specialty crop products to schools at our various trainings and meetings. The Child Nutrition Outreach Program (CNOP) has been another key partner in helping to communicate with summer food service operators, specifically by including MFTS in the Summer Food Service Kickoff Event and including local procurement resources on their website and in their newsletters.

Goals and Outcomes Achieved:

a) A description of the activities that were completed in order to achieve the performance goals and measureable outcomes identified in Attachment B;

Activities	**Status**
PROJECT GOAL 1, OBJECTIVE A	
Activity 1: Provide technical assistance to MA specialty crops producers regarding accessing summer food service sites	Completed - Ongoing technical assistance was provided to farms in Hampshire, Franklin, Berkshire, Worcester counties and southeastern Massachusetts to help connect them to existing summer food service sites. Czajkowski Farms in Hadley, MA was successfully connected with Springfield Public Schools to provide specialty crops (fruits and vegetables) directly to their food service operations during the summer months and beyond.
PROJECT GOAL 1, OBJECTIVE B	
Activity 1: Compile list of summer food service sites and contact information for each program	Completed – A complete list of Massachusetts summer food service sites was compiled. This list revealed 630 "open" summer food service sites throughout MA were being organized in the summer of 2016.
Activity 2: Provide technical assistance to summer food service site staff on procuring local specialty crops	Completed – Technical assistance was provided to summer food service staff by the Eastern MA Director during the John Stalker Institutes on May 25, 2016 & May 23-24, 2017 – an event attended by food service staff from across MA. Technical assistance was also provided during the Summer Food Kick Off event held in Westborough on February 25th, 2016 & February 8, 2017. During this event, attended by approximately 145 school food professionals each year, the Eastern MA Director conducted a presentation to attendees on the opportunities of procuring local foods for summer food sites and on the summer HOTM program opportunities.
PROJECT GOAL 1, OBJECTIVE C	
Activity 1: Create and design 'how-to' guide for summer food service sites on access/using specialty crops	**Complete**: We gathered information and material content from summer food service sites and specialty crop producers and created and designed a how-to guide
Activity 2: Distribute 'how-to' guide to summer food service site program	**Complete** – We were able to the finalized guide and distribute it to food service program staff throughout the Winter and Spring 2017 at individual meetings and group training opportunities

staff.	including the 2017 Summer Food Service Kickoff Event in February and the John Stalker Institute Summit in May – attended by 100+ food service staff from around Massachusetts. We also made the resource available through our e-newsletter and on our website. In partnership with the Child Nutrition Outreach Program we co-hosted a webinar for summer food service sponsors and walked through the guide and distributed the guide as a follow up resource.
PROJECT GOAL 1, OBJECTIVE D	
Activity 1: Create and design 'how-to' guide for MA specialty crops producers on selling to summer food service sites	Complete - We gathered information and material content from summer food service sites and specialty crop producers and created and designed a how-to guide for MA specialty crop producers.
Activity 2: Distribute 'how-to' guide to MA specialty crop producers	Complete - We distributed the finalized guide to producers throughout the Spring of 2017 at individual meetings and group training opportunities, like the Harvest New England Trade Show, as well as through our e-newsletter and on our website.
PROJECT GOAL 2, OBJECTIVE A	
Activity 1: Create and design best practice guide "Connecting Summer Food Service Sites to Farmers Markets'	**Complete** - We gathered information and material content from summer food service sites and farmers markets and created and designed a how-to guide for connecting food service sites & farmers markets across Massachusetts
Activity 2: Distribute best practice guide to MA specialty crop producers and market managers	**Complete** - We distributed the finalized guide to producers and market managers throughout the Spring of 2017 at individual meetings and group training opportunities like "Harvest New England" and the Farmers Market Manager workshop in March 2017, as well as through our e-newsletter and on our website. In partnership with the Child Nutrition Outreach Program we promoted the guide through a webinar for market managers and promoted directly to current market managers.
Activity 3: Distribute best practice guide to summer food service sites	Complete - We were able to the finalized guide and distribute it to food service program staff throughout the Winter and Spring 2017 at individual meetings and group training opportunities including the 2017 Summer Food Service Kickoff Event and the John Stalker Institute Summit in May – attended by 100+ food service staff from around Massachusetts. We also made the resource available through our e-newsletter and on our website.

PROJECT GOAL 2, OBJECTIVE B	
Activity 1: Compile list of MA farmers markets and contact information for each market manager	Completed – A 2016 list of Massachusetts farmers markets was obtained from MA Department of Agricultural Resources Farmers Market Program Coordinator. This list was used to identify communities where potential connections could be made between farmers markets and existing Summer Food Service Programs.
Activity 2: Research regulations and requirements of becoming an approved summer food service site	Completed - The state and federal regulations and requirements of establishing an approved summer food service site were researched and collected. This information was used to inform the technical assistance provided to farmers' market managers, community members and other food service staff throughout the duration of this project.
Activity 3: Distribute requirements/information to MA farmers markets	Completed – MFTS staff attended the Farmers Market Manager workshops on April 6, 2016 and March 8, 2017 and presented the requirements of becoming an approved summer food service site to farmers market managers, MDAR farmers market staff and the staff of Mass Farmers Markets.
PROJECT GOAL 3, OBJECTIVE A	
Activity 1: Identify partner institution to host culinary training and select date	Completed – Our partners with the Chefs in Schools program at Project Bread were identified as being able to conduct a culinary training applicable to a wide variety of institutions. The culinary training will be held during MFTS's statewide Farm & Sea to School Conference on November 4th in Leominster, MA.
Activity 2: Develop content and recipes for culinary training in partnership with host	Completed – In conjunction with Chef Sam Icklan training content and applicable recipes were developed to highlight specialty crops that can be procured and processed during the bountiful season and used throughout the remainder of the school year.
Activity 3: Conduct outreach to institutions promoting culinary training opportunity	Complete – Outreach about this culinary training was conducted August – October 2016 to a wide range of K12, College and Pre-school culinary staff. This outreach was done in conjunction with the outreach for the statewide Farm & Sea to School Conference.
Activity 4: Hold culinary training at host institution	Complete – The two culinary trainings, titled "**Innovations for Getting Local Foods and Nutrition Education into Summer Meal Programs"** and **"Making the Most of the Local Harvest"** were held on November 4th in Leominster, MA in conjunction with the statewide Farm & Sea to School Conference. The sessions were two of the more widely attended workshop sessions

	during the day-long conference. More information on the presentations and workshops can be found at: massfarmtoschool.org/conference/2016-conference-workshops/
PROJECT GOAL 3, OBJECTIVE B	
Activity 1: Conduct research to identify and describe processing opportunities for specialty crop producers in eastern MA scaled for institutional sales	Completed – The Eastern MA Director conducted extensive research of processing facilities and opportunities for specialty crop producers that would be able to fulfill institutional scaled demand. We supported outreach efforts for Boston's Commonwealth Kitchen to inform specialty crop growers about processing opportunities. We now are working with Commonwealth Kitchen to connect with institutions to purchase these products such as an all-local tomato sauce now being purchased by Tufts University. We connected a different processor to Carlson Orchards and they are now producing an all-Massachusetts apple sauce purchased by a number of k-12 institutions including the Chicopee Public Schools and Northeastern University. Plans for an all-Massachusetts peach puree are now underway for the 2017 season.
Activity 2: Distribute processing opportunity information to appropriate MA specialty crop producers	Complete - MFTS has and will continue to conduct outreach to specialty crop producers about processing opportunities in eastern MA, as well as existing opportunities in western MA with the Western MA Food Processing Center. One outcome of this outreach is Czaijkwoski Farm selling butternut squash to Commonwealth Kitchen to be processed into a shelf-stable puree for sale to institutions.
PROJECT GOAL 4, OBJECTIVE A	
Activity 1: Compile list of all school and non-school summer food service sites in MA	Completed – A list of all summer food service sites in MA was compiled in April 2016 gathering data from project partners at Project Bread and Dept of Elementary and Secondary Education (DESE)
Activity 2: Develop Harvest of the Month summer food service site materials	Completed – Specific Harvest of the Month materials were developed and designed to target summer food service sites. These materials highlighted specific MA specialty crops (strawberries, cucumbers & peaches).
Activity 3: Conduct outreach to all school and non-school summer food service sites in MA to encourage HOTM sign up	Completed – MFTS staff conducted extensive outreach to summer food service sites around MA using the developed HOTM summer food service materials, and encouraged them to participate in HOTM during the summer months. The developed materials were also used to conduct outreach to specialty crop

and promote program to specialty crop producers	producers throughout the Pioneer Valley and Worcester County.
Activity 4: Evaluate HOTM participation and impact in summer food service sites	Complete - Staff have been able to connect with a number of summer food site operators and have been successful in collecting informal information through meetings and small group discussions. This information helped us evaluate the success of the summer HOTM participation and overall 81-95% of responding participants reported increasing their local purchasing as a result of HOTM participation.

b) If the outcomes measured are long term, summarize the progress that has been made toward their achievement;

Increased procurement of Mass. specialty crops by food service programs during the summer months has significant potential to contribute to the long-term viability of Massachusetts farmers. While the scope of this project focused on the summers of 2016 and 2017, by working to help farmers and farmers markets make connections to the summer food service programs in their regions and creating resource guides for buyers and producers, farmers are now poised to continue to increase their sales of specialty crops to institutions during the summer months.
An additional long term benefit of our work is its positive impact on child health and nutrition. Research demonstrates that students will eat more fruits and vegetables when local products are served. Farm to school programs have improved students' knowledge, attitudes and behaviors towards healthy, local foods, and early exposure to healthy foods in school positively impacts student eating habits. These are behaviors that may stick with children throughout their lives not only leading to improved health but also leading them to support local farmers once they become food purchasers as adults. The growth of our Harvest of the Month campaign during the summer months means that more students were served healthy, local fruits and vegetables. A higher portion of summer food service programs in the state now have the tools to source and promote locally grown specialty crops during their program and we are closer to our goal of all students in Massachusetts having access to locally grown foods in their meal programs.

c) A comparison of actual accomplishments with the goals established for the grant period;
d) Illustration of baseline data that has been gathered to date and the progress towards achieving set targets;

Project Goal 1: "*Enhance Mass. specialty crop producers' competitiveness by building connections between MA specialty crops producers and summer food service programs and other underutilized nutrition programs throughout Massachusetts by producing a how-to guide for farmers to access summer food service programs and other underutilized nutrition programs and producing a how-to guide for summer food service sites and other non-school based nutrition programs to access and purchase MA specialty crops*
The target for Project Goal 1 has been met. The original target of 50% of summer food service programs increase knowledge of the availability of specialty crops for use in summer meals has

been met, with approximately 175 summer meal sponsors attending the organized trainings over the past 16 months; and the goal of 25 specialty crop producers increasing the knowledge of summer food service program opportunities has been met by meeting producers one on one, and also at events like the Harvest New England Trade Show where we spent two days meeting with attending specialty crop producers and discussing summer food program opportunities. In addition MFTS staff had the opportunity to meet with approximately 20 specialty crop producers in western and central MA during 2016 to provide them information about summer food service opportunities.

Project Goal 2: *Build upon thriving farmers markets in Massachusetts by providing opportunities for specialty crops vendors at farmers markets to engage directly with existing summer food service programs.*

Our original target of 20 farmers markets and participating specialty crop vendors increasing their knowledge of summer food service programs and exploring partnerships has been met through the training and technical assistance provided during the Farmers Market Manager workshops in April 2016 and March 2017. The 2016 event allowed MFTS staff to reach 75 farmers markets managers and their participating producers and by attending and presenting at the 2017 event, MFTS staff was able to reach approximately 100 additional market staff. At each of these events MFTS Eastern Mass Director Simca Horwitz presented on the opportunities of connecting with Summer Food Service sites within their communities, the logistics for becoming a food service site, and met with market managers and attending specialty crop producers to discuss the specific opportunities within their own communities.

Project Goal 3: *Increase the awareness of and promote the purchase of local specialty crops harvested during the summer for processing and year round use by schools and institutions through a group training demonstrating best practices of preparation and menuing of frozen specialty crops available through the Western MA Food Processing Center and demonstrating the best practices of processing summer harvested specialty crops for use during school year*

Our original target for Project Goal 3 was to have 50% of food service staff attending the training will report an increased knowledge about using and menuing local frozen products and processing specialty crops during summer months for year-round use. This target was met through the training provided on November 4th: "Making the Most of the Summer Harvest" which was held in conjunction with the statewide Massachusetts Farm to School Conference in Leominster, MA. At the training attendees were provided with recipe resources around using local specialty crops during the summer months, and also processing tips and information on how to use summer produce throughout the entire school year. In the post-conference evaluation 94% of responding attendees reported increasing their knowledge of local foods purchasing as a result of attending the organized workshops.

Project Goal 4: *Use Mass. Harvest of the Month campaign as a tool to encourage and increase the use of locally grown specialty crops in summer food service programs and other underutilized nutrition programs in Massachusetts.*

Our original target of a 50% increase in the number of summer food service sites in MA participating in Harvest of the Month during 2016 was met—with over 40 communities participating in HOTM and highlighting specialty crops in their programs-- a 50% increase from

27 communities the previous year. We are excited by this increase in participation and increased interest in celebrating local specialty crops during the summer months.

e) Summarize the major successful outcomes of the project in quantifiable terms.

This project was successful at raising awareness of farm to school across the state and further engaging summer food service programs and farmers market managers. In addition, we successfully engaged a broad audience of specialty crop producers, increasing knowledge of how to access the summer food service programs throughout the state.

- We conducted significant outreach and education to both farmers and food service staff to increase the amount of local specialty crops being served at Massachusetts summer food service programs. In particular, our Harvest of the Month campaign during the summer months was implemented in 40 communities during the summer of 2016 and highlighted local strawberries, cucumbers, and peaches. Due to a failed peach crop throughout New England in 2016 few communities were able to feature locally grown peaches and instead many sought to highlight other widely available local specialty crops such as zucchini or tomatoes.
- We organized five training workshops across the Commonwealth aimed at increasing local specialty crop procurement at summer food service sites, as well as increasing the use of local specialty crops year-round by highlighting recipes that make the most of the available harvest for menus throughout the school calendar. These workshops have been successful in reaching over 300 summer food service program providers, specialty crop producers, farmers' market managers, and institutional food service staff.
- We have developed and distributed comprehensive training materials aimed at food service staff administering summer food programs to help connect them to more local foods during the summer months. We have also developed similar materials for specialty crop producers here in Massachusetts to aid them in finding and working with summer food service sites in their surrounding communities, as well as materials to help connect farmers markets and summer meal sites within communities throughout Massachusetts.
- We have been excited by this opportunity to promote the processing of summer crops for year round use to food service staff around Massachusetts. Through individual technical assistance provided, as well as through group training opportunities, we have continued to highlight the opportunity of accessing local specialty crops year round through the Franklin County Food Processing Center which offers locally procured, flash-frozen vegetables to institutions. In addition to highlighting these available specialty crops year round, we held two trainings for food service staff on how to make the most of the summer harvest & procuring local produce in summer meal programs at our November 4th statewide Farm to School Conference. These workshops and cooking demonstration provided participants with strategies for using the harvest bounty in season, including working with large volumes of unexpected ingredients, reducing food waste, and processing foods for year round use.
- We continue to work individually with farmers and food service directors to develop sustainable purchasing relationships around the specialty crops available during the summer months. An example of this work on the North Shore is our work in Salem and Gloucester, MA where we have worked with Summer Food Service Sponsors (the Salem

Public Schools and The Open Door) to identify sources of these crops for their meal programs including connections to North Shore farms such as Marini Farm in Ipswich for strawberries and Brooksby Farm in Peabody. In the Boston area we have worked with the Somerville Public Schools to develop a unique purchasing relationship with Drumlin Farm in Lincoln, which has developed a CSA-style delivery for the district. In Western Mass. we have worked to highlight and share our existing successful farm to school relationships such as that between the Chicopee Public Schools and Czajkwoski Farm for strawberries to try to replicate this success in other communities like Greenfield, MA.

Beneficiaries:

This project benefitted specialty crop growers in Massachusetts, farmers market organizers, institutional food service providers and their customers (students and families). Massachusetts farmers learned about the process and opportunities for accessing the summer food service programs in their region. Massachusetts farmers' market organizers and managers gained more knowledge about the summer food service programs being offered in their communities and how to partner with them to serve as a meal site and provide opportunities for their specialty crop vendors to provide produce to these programs. Food service directors benefitted from training on how to best utilize local produce during the summer months for summer meal programs, but also how to process the bountiful produce of the summer months and use throughout the school year. Summer food service staff of non-school based programs also benefitted by being provided with information on how to access specialty crops and specialty crop producers for their programs. Finally, students are the long term beneficiaries of this project. As more farmers gain the knowledge of how to access this summer market and food service, staffs become better skilled at making the most of locally grown specialty crops during the summer month, access to these healthy foods for students will increase throughout the entire year.

- 40 summer food service programs and their host communities with Massachusetts were direct beneficiaries through their participation in the HOTM program.
- Each month between 81% and 95% of responding participants in HOTM reported purchasing the locally grown specialty crops to feature on their menus.

300 summer food service program providers, specialty crop producers, farmers' market managers, and institutional food service staff have an increased awareness of the opportunities that exist to connect summer food service sites, farmers markets and specialty crop producers during the summer months.

Lessons Learned

We undertook this project because institutional food purchasing has great potential to impact the regional agricultural economy, and particularly the specialty crop industry. Due to the short growing season here in Massachusetts, making the most of the bountiful summer season is crucial for specialty crop producers to realize the full potential of the institutional sales market. Summer meal programs in Massachusetts have historically not been largely accessed by specialty crop producers due to a lack of awareness and information by parties. By creating resource guides and providing appropriate trainings MFTS is confident summer food service staff, specialty crop producers and farmers market organizers will be more informed and better suited to seek out sustainable purchasing relationships during the summer month.

Contact Person

Lisa Damon
Massachusetts Farm to School
PO Box 1514
Easthampton, MA 01027

Additional Information:

Attachments:

1. How-to Guide for Summer Food Service Sites: *Locally Grown Summer Meals: Incorporating farm fresh foods into your summer meal program*
2. How-To Guide for Specialty Crop Producers: *Locally Grown Summer Meals: Selling Local Produce to Summer Meal Sites*
3. How-To Guide for Farmers Markets: *Meals at the Market: How Farmers Markets Can Help Reduce Child Hunger During the Summer*

Locally-Grown Summer Meals

Incorporating farm fresh foods into your summer meal program

Summer meals are an essential tool for reducing childhood hunger in Massachusetts. Incorporating fresh, local foods is a good way to add variety and quality to your meals while also supporting your local economy. Summer meals provide an opportunity to introduce children and families to the healthy, locally-grown foods that are in season and available at area markets. Summer is peak harvest season and serving local foods ensures your meals use the freshest fruits and vegetables available.

WHAT'S IN SEASON?

Summer meals overlap with the major harvest months in Massachusetts. Locally-grown crops available in June, July, and August include:

Fruit: Strawberries, blueberries, peaches, plums, apples, and melons

Vegetables: cucumbers, summer squash, peas, lettuce, kale & other greens, corn, carrots, green beans, potatoes, tomatoes, peppers, and eggplant

Check out goo.gl/uWydzj for a complete Massachusetts harvest calendar.

HOW TO SOURCE LOCAL FOODS

There are many different options for sourcing local foods for summer meals. Finding the right fit for your meal program will depend on a number of characteristics including: the size and location of the program, your kitchen and staffing capacity, menu, and existing vendor relationships.

Options for purchasing local food include:

- Direct delivery from a farm
- Through a produce distributor or aggregator
- Through a Community Supported Agriculture (CSA) program
- From a farmers market
- From school or community gardens

KEYS TO SUCCESS

Menus: Choose seasonal menu items that can easily incorporate what is available locally. Check out the Mass. Harvest of the Month webpage for recipe suggestions that highlight local crops and links to other seasonal recipes.

Chicopee Food Service staff prep local strawberries

Promotion: Make sure people know when you are serving local items. Utilize the Harvest of the Month promotional materials or other point of purchase materials to highlight local ingredients. Consider cross-promotion with your local farmers market. For example, if the market is having a tomato celebration, feature tomatoes in your meal that day and use the market's materials to promote your meal.

Taste Testing: Most children will want to try a bite of a new food before committing to a whole serving. Consider offering small taste tests of new items to encourage selection. Volunteers can be a great resource for implementing taste testing. Consider using taste tests to familiarize children with a new item and make sure it is marketable before you put it on the menu.

MASSACHUSETTS Farm to School www.massfarmtoschool.org | www.meals4kids.org

Locally-Grown Summer Meals

Incorporating farm fresh foods into your summer meal program

GET CONNECTED

Massachusetts Farm to School staff are available to help you establish the purchasing relationship that is the right fit for your program.

1. **Prepare information about your meal program to share with potential vendors.** Include the products you're interested in purchasing, purchasing volumes, and any delivery requirements or other necessary certifications.

2. **Reach out to local farms to ask about their interest in selling to your meal program.** Request availability lists and pricing.

3. **If sourcing through a distributor, ask what farms they purchase from.** Many distributors buy local in season. Ask your distributor to identify local items on product guides.

4. **Does your community have a farmers market? If so, find out which farms are vendors at the market.** The market manager can give you a list of farms with contact information. While these farms may not currently wholesale, they may be interested in selling to you when they learn about the meal program and the marketing opportunities it provides. Farmers markets can also serve as summer meal sites.

MA farmer Joe Czajkowski in his strawberry field

MEALS AT THE MARKET

Hosting these meal programs at farmers markets can transform the market into a site of healthy food access for the whole family. Summer meals at farmers markets are the perfect place to feature fresh, locally grown foods to attract more participants, provide the highest quality food, and support your local farmers. Many markets accept SNAP and even offer incentives to SNAP customers, ensuring that local foods are accessible to all.

Greenfield Public School staff handing out meals and local fruit at the Greenfield Farmers Market

Opportunities for nutrition education are high at the market. Incorporating the same foods on sale at the market into your meals can give families ideas for how to use these healthy ingredients at home. Never underestimate the power of children to influence their family's purchasing practices!

NEXT STEPS: FINDING LOCAL FOOD FOR SUMMER MEALS

Contact Massachusetts Farm to School staff for help accessing more locally grown food at info@massfarmtoschool.org or visit us online at www.massfarmtoschool.org

If you are interested in offering meals at a farmers market, contact the Department of Elementary and Secondary Education's Child Nutrition Outreach Program at Project Bread at CNOP@projectbread.org to find out if your community's market is eligible to provide free summer meals to children and teens. visit us online at www.meals4kids.org.

MASSACHUSETTS Farm to School

www.massfarmtoschool.org | www.meals4kids.org

Locally-Grown Summer Meals

Selling Local Produce to Summer Meal Sites

Summer meals are an essential tool for reducing childhood hunger in Massachusetts. Summer meals provide an opportunity to introduce children and families to the healthy, locally-grown foods that are in season and available at area markets and farm stands. Summer meals can be a great fit for Massachusetts farmers looking for wholesale opportunities during the summer months – when fresh produce is at its peak!

HOW DO SUMMER MEALS WORK?

Even though school is out for the summer, many communities still provide meals to children through the USDA Summer Food Service Program (SFSP). The SFSP is a federally funded nutrition program that provides **free meals to children ages 18 and under** when school is not in session. SFSP sites function as the physical location in which meals are distributed. Sites work alongside a "sponsor" which produces the meals and procures the ingredients from vendors (including local farmers). The sponsor also delivers the meals to the sites and provides all administrative support for the program. Sponsors can include school food service, YMCAs, Boys & Girls Clubs, as well as summer camps or other community-based organizations.

HARVEST OF THE MONTH SUMMER

Mass. Farm to School's **Summer Harvest of the Month** campaign promotes a different Massachusetts-grown food each month at participating summer food service sites across the state. The program's goal is to encourage healthy food choices by increasing students' exposure to seasonal foods while also supporting local farmers and building excitement about nutritious lunches during the summer months!

June: Strawberries *August: Peaches* *July: Cucumbers*

In addition to the featured Harvest of the Month crops, summer meals are a good place to serve things like hand-held fruit, fresh veggie sticks, lettuces, and other fresh fruits and vegetables. Meals are often prepared at a central location as cold "brown bag" sandwiches or summer salads/sides and distributed to sites across the community. Program sponsors may be more interested in items that can be served cold or incorporated into cold menu items.

MASSACHUSETTS
Farm to School
www.massfarmtoschool.org

Locally-Grown Summer Meals

Selling Local Produce to Summer Meal Sites

FINDING SUMMER MEAL SPONSORS & SITES

Contact Massachusetts Farm to School staff for more information or for help in connecting with a summer meal sponsor or site. Email us at info@massfarmtoschool.org or visit us online at www.massfarmtoschool.org

For a list of summer meal sites across Massachusetts and for more information about the Summer Food Service Program visit www.meals4kids.org.

Meals at the Market

How Farmers Markets Can Help to Reduce Child Hunger During the Summer

PROJECT BREAD
A FRESH APPROACH TO ENDING HUNGER℠

In Massachusetts, over 200,000 youth live in food insecure homes. Hunger impacts a child's ability to thrive academically and puts them at risk for adverse health outcomes. Low-income families rely on healthy school meals to bridge gaps in their food budgets, where can they turn when school is out? The Summer Food Service Program (SFSP) is a federally-funded nutrition program that provides free meals to youth ages 18 and under. With your help, we can reduce child hunger in the summer months.

FARMERS MARKETS AND SFSP: A WINNING PARTNERSHIP TO ADDRESS SUMMER HUNGER

Farmers markets help build a more sustainable local food system by connecting regional producers with local shoppers. Many markets accept SNAP benefits and WIC coupons which often provide incentives for low-income households to help increase their purchasing power. By providing nutritionally-balanced meals to children during the summertime, farmers markets can increase foot traffic and visibility while fulfilling their mission to reduce food insecurity and promote healthy food access.

"Setting up a feeding site at a farmers market can provide a safe place for children to congregate, increase foot traffic to the market, provide access to a variety of seasonal ingredients, connect children with the sources of their food, and raise community awareness about Summer Meal Programs."
–USDA Summer Meals Toolkit

Farmers markets are also particularly well-positioned to serve as summer meals sites. Markets start just before or after the school year ends and extend into the fall. The majority of markets in Massachusetts fall on weekends and/or extend into the evening hours when most traditional SFSP meals are closed. Markets already serve as community gathering places in a high-traffic locations, making them an ideal fit as potential SFSP sites.

SUCCESS STORY: GREENFIELD FARMERS MARKET

Greenfield Public Schools partnered with the Greenfield Farmers Market to establish a summer meals site in 2016. Summer meals at the market quickly attracted many children in the area as the only site open on Saturdays. The meal took place in a grassy, well-trafficked square in the heart of downtown Greenfield, adjacent to the market.

Greenfield Public School staff handing out meals and local fruit at the Greenfield Farmers Market

A banner and lawn sign advertised the program while both sponsor and market staff walked around to personally promote the program. A tree provided shade for the table where the food service staff displayed large bowls of fresh fruit to build excitement about that day's menu. Children especially loved the weeks when fresh-cut, local fruit were offered – particularly the cool watermelon on a hot day.

Massachusetts Department of Elementary & Secondary Education | Massachusetts ESE Child Nutrition Outreach Program at Project Bread | 145 Border Street East Boston, MA 02128 | 617-723-5000 | cnop@projectbread.org| meals4kids.org|
PROJECT BREAD CNOP

Meals at the Market

How Farmers Markets Can Help to Reduce Child Hunger During the Summer

PROJECT BREAD
A FRESH APPROACH TO ENDING HUNGER℠

SITES & SPONSORS

Farmers markets can help to provide summer meals to the youth in their community by becoming a "site." Sites function as the physical location in which meals are distributed. Sites work alongside a "sponsor" which produces or procures the meals in accordance with USDA guidelines, delivers meals to the site, and provides administrative support by completing paperwork and handling meal reimbursements.

KEYS TO SUCCESS

Signage: Display a banner at the table where SFSP meals are being handed out. Additional signs should be visible from the road, entrances to the market and at the market manager's table to ensure awareness of the program.

Staffing Matters: Partnering with a sponsor can help to reduce staffing burdens, but it is vital to have dedicated market staff or volunteers on-site to welcome children, document the number of meals distributed, and ensure the program's success. When staffing is a challenge, local partners can assist in providing additional support. As part of the technical assistance that CNOP provides, we can help farmers markets develop innovative local partnerships and staffing structures that work, whatever your capacity.

Interns & Volunteers: Engaging teens and young adults to help with the logistics of setting up a summer meal site, outreach, or conducting complementary programming can be a tool to bridge staffing gaps when resources are limited. Bringing young people aboard to help promote the availability of free meals to their peers and younger youth helps to reduce the stigma that is sometimes associated with the program—plus interns under 18 can receive a free meal themselves!

Cross-Promoting SNAP, WIC and SFSP: SNAP benefits and WIC/Senior farmers market coupons are accepted at most farmers markets and many offer matching incentives as well. Cross-promoting the summer meal site at your market alongside these federal nutrition programs can help your customers to access vital benefits to extend their food budgets. WIC offices hold Farmers Market Days to hand out WIC Farmers Market Nutrition Program coupons. Utilizing special events and other outreach opportunities to spread the word about summer meals helps cast the farmers market as a hub for nutritious food during the summer.

Ideal Location: There is no substitute for seeing others enjoying their meal to entice kids, teens, and families to participate in the program. By having a tent or other designated eating area you can help create this atmosphere. A tent can offer shade and some protection from rain. In the absence of a tent, a park bench, picnic blanket, or even the shady area under a tree can also work.

Revere Public School staff at the Revere Farmers Market

NEXT STEPS: STARTING AN SFSP MARKET SITE!

Contact the Department of Elementary and Secondary Education's Child Nutrition Outreach Program at Project Bread at CNOP@projectbread.org to find out if your market is eligible to provide free summer meals to children and teens or visit us online at www.meals4kids.org.

Massachusetts Department of Elementary & Secondary Education | Massachusetts ESE Child Nutrition Outreach Program at Project Bread | 145 Border Street East Boston, MA 02128 | | 617-723-5000 | cnop@projectbread.org| meals4kids.org|
PROJECT BREAD CNOP

Organization:

Massachusetts Nursery and Landscape Association, Inc.

Project Title:

Plant Something MA…Get Dirty! Campaign: Building a Movement through Millennial Awareness & Outreach

Project Summary:

The Plant Something MA campaign is focused on building the state's green infrastructure by creating an environmental movement that will lead to additional revenues for the industry in Massachusetts. We will use a targeted social media campaign—Plant Something MA…Get Dirty! to reach the next generation of horticulture consumers. We will develop a new, three-prong campaign for folks at beginner, intermediate, and expert levels to streamline the Plant Something MA campaign so our website, social media, and print presence has a unified and catchy message. We expect this to increase traffic to our website, thus creating more opportunities for our members. Additionally, we will engage with local print media to include public service announcements and educational articles that are timely and regionally appropriate. We expect this multi-pronged marketing approach to capture the attention of people at various stages of life and stages of engagement with horticulture, thus building a wide reaching movement necessary in this time of uncertain climate and economy.

Project Purpose

Using results of national market research; the horticulture industry must focus its attention on the future generation of home and condo buyers. Millennials, ages 18-34, are expected to play a large part in home buying beginning in 2015. This same age group spends their collective $200 billion annual dollars on authentic, altruistic brands. They influence more than $500 billion annually in purchases by parents, friends, relatives, and coworkers. We hope to capture this spending power and guide it toward our members who offer locally sourced specialty crop plant material, technical expertise, and general horticultural information. The components of the proposed project will build upon our recent success, while working towards the main goal of increasing the competitiveness and long term sustainability of specialty crops in Massachusetts.

This project will benefit not only our members, but also all specialty crop beneficiaries by increasing sales and awareness among Millennials, an essential and new consumer base. By catching this niche population through uniquely directed marketing strategies, we will increase revenue for all specialty crop growers and retailers. All wholesale and retail nursery, floriculture, and horticulture crop producers will benefit from the project as well as those industries considered fringe including landscape contractors and designers. All horticulture and floriculture growers will benefit from increasing millennial consumption of specialty crops.
This project is of utmost importance to help the horticulture and floriculture industry to continue to rebuild after a decade of economic downturn. In a time of uncertain climate and economy, it is necessary to utilize new revenue streams and technology. The timeliness is evidenced by growing social media use among millennials and their indifference to traditional marketing strategies. The specialty crops sellers and growers need to capitalize on this wave if they are to

stay economically viable, and Plant Something MA can bring these worlds together with the Plant Something MA...Get Dirty! campaign.

Background

Plant Something MA is a joint project of the Massachusetts Flower Growers' Association (MFGA) and the Massachusetts Nursery and Landscape Association (MNLA). MNLA and MFGA represent greenhouse growers, turf growers, nurseries, and growers of indoor and outdoor vegetable and herb plants and flowers. The Plant Something MA campaign is focused on building the state's green infrastructure by creating an environmental movement that will lead to additional revenues for the industry in Massachusetts. Baseline data collected through the Plant Something MA campaign thus far indicate a high consumer demand for locally sourced plant material, technical expertise and general horticultural information. The components of the proposed project will build upon the success of previous campaigns, while working towards the central goal of increasing the competitiveness and long term sustainability of specialty crops in Massachusetts.

Objectives

The objective of this project is to capture and educate a new audience (millennials) to the value of specialty crops in an effort to direct their spending power towards plants. Plant Something MA is a consumer outreach program that educates the consumer on the value of plants. Millennials do not respond to traditional advertising, but they do spend up to 18 hours a day engaging with technology. Plant Something MA will use a catchy, informative, targeted social media campaign—Plant Something MA…Get Dirty! to reach this next generation of horticulture and floriculture consumers. The millennial age group responds differently to traditional marketing strategies. If we want to see new growth in this demographic sector in the horticultural sphere, we need to adapt. Dan Schawbel, founder of Millennial Branding says, "Instead of traditional advertising, which they ignore, brands have to publish authentic content as a way of building trust and loyalty with this extremely important and influential demographic." We need to steer clear of conventional marketing strategies that millennials may deem "preachy" and engage them in the project. Instead, we will spark interest with our witty slogan and create opportunities that marry horticulture and social media. This engagement will directly affect specialty crops by increasing sales of these products.

While this proposal builds upon the success of a previously funded Specialty Crop Block Grant, this is a new project. Plant Something MA has established financial sustainability as a goal for the program. Through sponsorship development, we plan to transition the program into being self-sustaining in the future.

This project was not been submitted to or funded by another Federal or State grant programs.

Project Approach:

Online Library of Resources & Information

Together, the Plant Something Taskforce (comprised of MNLA and MFGA members), the Project Coordinator and Web Designer developed an online library of resources and information for three pronged Plant Something MA: Get Dirty! campaign, targeting people with beginner (Get the Dirt), intermediate, (Play with Dirty) and expert (Down with Dirt) levels of expertise.

The updated website to reflect the three pronged levels and the new Get Dirty! campaign was complete in May 2016.

Create & Distribute a Quiz & Follow up Survey

The Project Coordinator created a quiz to assess consumer spending among millennials. The quiz was posted on the Plant Something website in March 2016 and promoted on Facebook, Twitter, Instagram and tabling events. We also reached out to our partners and asked them to share our social media posts related to the Quiz. The Project Coordinator sent an "End of the Season Survey" to those that took the quiz to measure the increase in knowledge and engagement with specialty crops.

Goals and Outcomes Achieved:

The purpose of this project was to capture and educate a new audience (millennials) to the value of specialty crops in an effort to direct their spending power towards specialty crop plants. We are committed to achieving intermediate outcomes as they relate to communicating with and engaging the millennial buyer. The expected long term fulfillment and outcomes would include continued sales and engagement of this new marketing opportunity, the millennials!

- Increase revenue for fruit and nut trees, vegetables, annual bedding plants, potted flowering plants, potted herbaceous perennials, foliage plants, medicinal herbs, and horticulture by engaging millennials as consumers.
- Raise awareness about the above specialty crops by developing a unique marketing plan specifically targeted to the millennial age group through the Plant Something MA...Get Dirty! campaign.

Online Library of Resources & Information

As stated above, the Plant Something MA developed an online library of resources and information for three pronged Plant Something MA: Get Dirty! campaign, targeting people with beginner (Get the Dirt), intermediate, (Play with Dirty) and expert (Down with Dirt) levels of expertise. Each prong or gardening level has its own gardening tips and projects. The updated website to reflect the three pronged levels and the new Get Dirty! campaign was complete in May 2016. Through the quiz, consumers determined their gardening level. The Project Coordinator scored the quizzes and sent back to the quiz taker an email directing them to a specific webpage with the correct gardening level.

Create & Distribute a Quiz & Follow up Survey

As mentioned, the Project Coordinator created a quiz to assess consumer spending among millennials. The quiz was posted on the Plant Something website in March 2016 and promoted on Facebook, Twitter, Instagram and tabling events. We repeated the quiz again in spring 2017. We again promoted the quiz on all social media platforms and emailed everyone that had engaged with the campaign in the past. We also reached out to our partners and asked them to share our social media posts related to the Quiz. The Project Coordinator sent an "End of the Season Survey" to those that took the quiz to measure the increase in knowledge and engagement with specialty crops. The "End of the Season Survey" was sent October 2016 and 2017.

Comparison of Results	2016	2017
Number of Quiz responses	500	267
Percent of millennials that responded	19%	21%
A majority spent this amount of money in their garden	$200-$499	$200-$499
Most planted plant	Tomatoes	Tomatoes
Most popular place to plant	In the ground	In containers
Most popular gardening level (checked off by quiz taker)	Play with Dirt (or an intermediate)	Play with Dirt (or an intermediate)
Number of End of the Season Quiz responses	56	27
Percent of millennials that responded	19%	15%
Percent of respondents bumped up their garden expertise*	14%	5%
Percent of respondents increased garden space*	53%^	60%
Percent of respondents increased garden purchases*	45%^	35%

**some level of errors because some quizzes could be matched with original quiz*
^corrected number from previous reports

Age Breakdown	2016	2017
Under 18	2%	3%
18-34	21%	21%
35-50	32%	34%
51-70	42%	39%
Over 70	4%	3%

Promotion of Plant Something

On May 11, 2016 we issued a Press Release to 124 news contacts about the Plant Something for Pollinators Campaign Kickoff. Starting on May 15, 2016, Plant Something Massachusetts asked Massachusetts residents to pledge to Plant Something for Pollinators, stating that 'If everyone planted just one plant that attracts pollinators, pollinators would make a "beeline" to our state.' Residents were directed to pledge online. Both 22News WWLP.com and Wicked Local Acton picked up the story.

Awareness to Action

In an effort to get awareness moved to action, we asked consumers through our social media platforms, website, press releases and tabling events to go our website to Pledge to Plant Something for Pollinators and add their town/city to a Massachusetts map. Since its inception, we have received 77 pledges and 26% were millennials.

Plant Something MA also exhibited at the Boston Flower Show in March 2016. Roughly 8,000 attendees walked through our booth and planted a mystery plant in a cup of soil. Attendees were asked visit our website to learn what they planted (a marigold) and how to take care of it. Between March 1 and April 30, 2016, there were over 2000 page views of this webpage.

Plant Something MA returned to the Boston Flower Show in March 2017! Roughly, 5000 attendees walked through our booth and collected a mixture of mystery seeds. Similar to years past, attendees were directed to our website to learn what they received and how to take care of those plants. Below is a breakdown of website visitors.

Regardless of the numbers, when conversing with booth attendees, they clearly remember our booths in the past and told us what they received for a seed in 2015 or how their marigolds turned out in 2016. Booth attendees were excited to see us and "report in" about prior plantings!

Month	2016	2017
January		2002
February		3657
March	10894	4634
April	6171	6072
May	5729	4652
June	3188	1967
July	2150	1743
August	2796	1454
September	2657	1088
October	1681	
November	1374	
December	1383	

Comparison of Set Goals & Achieved Goals

Project Activity	Staff	Timeline in Proposal	Status
Develop an online library of resources and information for three pronged Plant Something MA: Get Dirty! campaign, targeting people with beginner (New to Dirt), intermediate, (A Little Dirty) and expert (Living Dirty) levels of expertise.	Project Coordinator	February-May 2016	Completed in May 2016
Update website to reflect new Get Dirty!	Project Coordinator and Sirius Design	November 2015-September 2017	Completed in May 2016

campaign			
Create survey to assess consumer spending among millennials and newsletter for awareness raising	Project Coordinator	October 2015	Survey became a "Quiz" and was developed and completed Spring of 2016.
Distribute survey and newsletter to participants and collate data collection	Project Coordinator	Quarterly: October 2015, January 2016, April 2016, July 2016, October 2016, January 2017, April 2017, and July 2017	Quiz distributed in March 2016 and March 2017; Newsletter placed on hold
Work with local news outlets to have Plant Something MA articles, specific to our region, printed in place of generalized AP articles.	Project Coordinator and Plant Something MA Taskforce	September 2016-September 2017	Press releases issued May 2016.
Develop Plant Something MA: The Dirty Cause, a project that moves from awareness to action	Project Coordinator and Plant Something MA Taskforce	January 2016-September 2017	Developed and posted online May 2016. Continuously promoted through events and social media.
Data Analysis of knowledge growth and revenue spending- with the goal of 10% of beginners, 25% of intermediate, and 50% of experts contribute revenue to specialty crops	Project Coordinator	Quarterly: January 2016, April 2016, July 2016, October 2016, January 2017, April 2017, and July 2017	This task became incorporated into the Quiz.

Beneficiaries:

All wholesale and retail nursery, floriculture, and horticulture crop producers will benefit from the project as well as those industries considered fringe including landscape contractors and designers. All horticulture and floriculture growers will benefit from increasing millennial consumption of specialty crops.

There are over 5,000 horticulture-related businesses within Massachusetts. Wholesale and retail producer members of both organizations exceed 300 businesses. A campaign targeted to direct

new consumers to local resources of plant material and technical experts has the potential to positively impact the entire horticultural specialty crop industry. Additionally, all materials and programs created by Plant Something MA are shared with our fellow national Plant Something program participants. As a result, our project will benefit additional nursery, floriculture and horticulture specialty crop producers in fourteen other states.

This project will benefit not only our members, but also all specialty crop beneficiaries by increasing sales and awareness among millennials, an essential and new consumer base. By catching this niche population through uniquely directed marketing strategies, we will increase revenue for all specialty crop growers and retailers.

Economic Impact
With just over 1% of the nation's millennials residing in MA (based on 2007 CDC data), their collective spending is 2 billion dollars annually in our state. If the Plant Something MA...Get Dirty! campaign can direct even 1% of this spending toward specialty crops, they would contribute $20 million of annual revenue to Massachusetts.
Plant Something MA is part of a nationwide movement. There are fourteen other states participating. All organizations share information and tips to support the overall program. The other states involved to date are: Washington, Oregon, Idaho, California, Arizona, Colorado, Arkansas, Ohio, New York, New Jersey, Virginia, North Carolina, Georgia, and Florida.

Lessons Learned

While it's great that some millennials are gardening (19% millennials were engaged in the 2016 quiz and 21% in 2017), these figures aren't considered a significant engagement. To combat the issue, in 2017, the Project Coordinator tried to reach out to new potential partner groups who are actively engaged with millennials. We asked them to post about our quiz.

We would have enjoyed seeing more spending money towards garden activities after engaging consumers. While a 44% and 35% increase in spending is good (2016 & 2017 respectively), it is not significant. We can assume to some degrees that the extreme drought conditions across a majority of the state contributed to the lack of enthusiasm in 2016 towards planting and gardening.

We were also disappointed in the website page views in 2017. We contribute some of that lack of interest because while the Boston Flower show happened in March, most of the seeds would go into the ground in late May and early June. People like immediate action so they might have forgotten about the seeds from March to May. We did try to increase the interest with a photo contest on Instagram in September 2017.

We also changed one course of action from the original grant. We proposed a newsletter to consumers (participants of the quiz). However, we decided it was more efficient with our staff resources to send an email to participants and direct them to the website, specifically the webpage with tips and projects for their gardening expertise level.

Contact Person

Rena Sumner, Executive Director
Massachusetts Nursery & Landscape Association, Inc.
Phone: 413-369-4731
Mnlaoffice@aol.com

Additional Information

- Plant Something Quiz

Take our Plant Something Quiz!

Take our quiz to find out if you are about to "Get the Dirt" for the first time, already "Play with Dirt" or are truly "Down with Dirt."

At the end of the quiz, you'll have the opportunity to enter a raffle to win a $100 gift certificate for your local independent garden center or landscaper.

How would you categorize yourself as a gardener? (Select one.)

- (•) New to Dirt (or a beginner)
- ( ) Play with Dirt (or an intermediate)
- ( ) Down with Dirt (or an expert)
- ( ) I don't consider myself a gardener
- ( ) I'm not sure how to categorize myself
- ( ) Other (Please comment):

How many years have you been planting? (Select one.)

- (•) I have never planted anything before
- ( ) Less than 1 year
- ( ) 1–2 years
- ( ) 2–5 years
- ( ) More than 5 years

2015 Planting Experience

In which of the following places did you plant in 2015? (Select all that apply.)

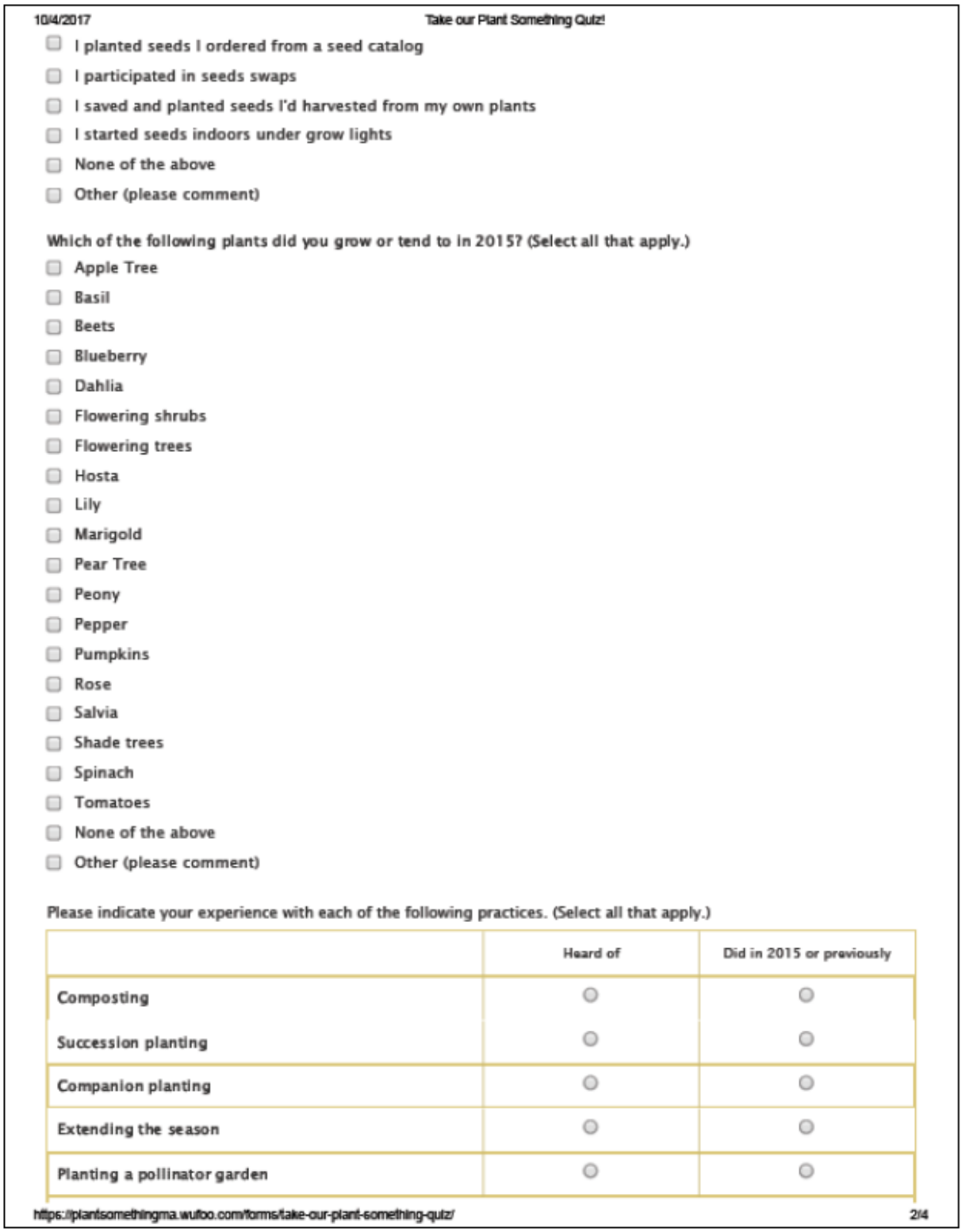
- [ ] Houseplants
- [ ] Hanging Baskets
- [ ] Containers on deck/patio/yard
- [ ] Raised beds
- [ ] In the ground
- [ ] Other/none of the above

How much space did you devote to planting in 2015? (Select one.)

- (•) 1–100 square feet
- ( ) 200–500 square feet
- ( ) Over 500 square feet
- ( ) Other/none of the above (Please comment.)

In which of the following activities did you engage during 2015? (Select all that apply.)

- [ ] I planted seedlings I bought from a store
- [ ] I planted seeds from packages I bought from a store



10/4/2017 Take our Plant Something Quiz!

- [ ] I planted seeds I ordered from a seed catalog
- [ ] I participated in seeds swaps
- [ ] I saved and planted seeds I'd harvested from my own plants
- [ ] I started seeds indoors under grow lights
- [ ] None of the above
- [ ] Other (please comment)

Which of the following plants did you grow or tend to in 2015? (Select all that apply.)

- [ ] Apple Tree
- [ ] Basil
- [ ] Beets
- [ ] Blueberry
- [ ] Dahlia
- [ ] Flowering shrubs
- [ ] Flowering trees
- [ ] Hosta
- [ ] Lily
- [ ] Marigold
- [ ] Pear Tree
- [ ] Peony
- [ ] Pepper
- [ ] Pumpkins
- [ ] Rose
- [ ] Salvia
- [ ] Shade trees
- [ ] Spinach
- [ ] Tomatoes
- [ ] None of the above
- [ ] Other (please comment)

Please indicate your experience with each of the following practices. (Select all that apply.)

	Heard of	Did in 2015 or previously
Composting	○	○
Succession planting	○	○
Companion planting	○	○
Extending the season	○	○
Planting a pollinator garden	○	○

https://plantsomethingma.wufoo.com/forms/take-our-plant-something-quiz/ 2/4

	Heard of	Did in 2015 or previously
Mulching	○	○
Grafting	○	○
Vertical gardening	○	○
Cold frame	○	○

Spending Habits

Approximately how much did you spend on planting and maintaining your plants in 2015? (Select one.)

- (●) Nothing
- ( ) $1–$99
- ( ) $100 – $199
- ( ) $200–$499
- ( ) $500 or more
- ( ) Other:

From which of the following vendors did you purchase plants and plantings supplies in 2015? (Select all that apply.)

- [ ] Local greenhouse, nursery, or independent garden center
- [ ] Large box store garden shop (Wal-Mart, Home Depot, Lowe's, etc.)
- [ ] Internet
- [ ] Farmer's Market
- [ ] Other (please comment)

Please tell us about you.

Which category below includes your age? (Select one.)

- (●) Under 18
- ( ) 18–34
- ( ) 35–50
- ( ) 51–70
- ( ) Over 70

In which Massachusetts county do you reside?

Barnstable ▼

What type of home do you live in?

- (●) House I own
- ( ) House I rent


10/4/2017
Take our Plant Something Quiz!
Apartment I rent
Condominium I own
Condominium I rent
Other
Please provide your email address. We'll score your answers and respond with your gardening level shortly. You'll be entered into a raffle to win a $100 gift certificate to a local, independent garden center or landscaper. We promise not to flood you with email. And we'll never share, trade or sell your information!
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Type the characters from the image below. *
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reCAPTCHA
Type the text
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Organization:

New England Apple Association

Project Title:

Building a Better Brand for New England Apple

Project Summary:

The project was designed to promote traditional New England apples such as Cortland and McIntosh to better compete with new trademarked varieties entering the New England market, and to rebrand Jonagold as a premium variety. Promotions were held during 2016, 2017, and 2018, including in-store sampling, point-of-purchase display cards, a series of video programs describing New England's 14 leading varieties, a wall calendar, and weblog.

McIntosh accounts for nearly two-thirds of the New England crop, and Cortland is among its most popular varieties, but both present marketing challenges as winter progresses and supermarkets are flooded with new, trademarked varieties that cannot be grown in the region. Despite advances in storage and refrigeration that keep it crisp year-round, McIntosh has the reputation of becoming soft by late winter. Cortland can develop a harmless greasy skin as it ages. Yet both apples are New England traditions, locally grown, with outstanding flavor and texture.

Jonagold's striking red-and-gold color, juiciness, and crisp texture compare favorably to Honeycrisp, which commands a premium in the marketplace. Rebranding Jonagold had the potential to provide immediate benefits while growers invest in new plantings to meet increased demand. Unfortunately, a threatened lawsuit over the new name, JuicyGold, derailed that part of the project. A smaller-than-usual 2016 harvest also meant delaying aspects of the project for one year.

Project Approach:

The project employed a number of marketing tools to promote New England's leading varieties, to benefit growers and educate consumers across several platforms. These included traditional printed materials like the point-of-purchase display cards that included photographs and descriptions of New England's 14 leading varieties, and beautiful wall calendars in 2016, 2017, 2018, and 2019 that featured many of these leading varieties, multiple times.

The project included a series of one-minute video programs featuring each of the 14 varieties, which are now available on the New England Apple Association website, newenglandapples.org, and on the search engine YouTube.

The project encountered two serious problems and delays: a complaint filed by Custom Orchards, a well-financed Washington state conglomerate, to prevent New England's apple growers from using the name JuicyGold to rebrand Jonagold, and the small 2016 fresh apple crop.

We resolved the first issue by continuing to promote Jonagold under its original name, and to put greater emphasis on in-store sampling for the other traditional New England varieties listed in the grant — chiefly McIntosh.

The second issue was resolved by postponing video production and the in-store sampling campaign a year, to the winter of 2017-2018, when there was an adequate supply of apples. The 2017 fresh harvest was a good one, so we conducted the campaign in April 2018 according to the revised schedule, and produced the videos by August 2018 using apples obtained from the fall 2017 harvest.

Considerable time and expense was made to rebrand Jonagold, including extensive consumer research and consultation with growers. The result was a new name, JuicyGold, that was poised to re-introduce Jonagold to consumers as a premium apple.

All was going smoothly in the summer of 2016, when Custom Orchards objected during the final stages of the trademark registration process, claiming a conflict with a trademark for a new apple, Juici Delite! While its legal position was strong, the nonprofit New England Apple Association lacked the financial resources to fight the charge, and subsequently was forced to drop the JuicyGold name, requiring a last-minute removal from the 2017 calendar and the cancellation of a proposed consumer survey at the Eastern States Exposition that September.

In response, we revised the project to emphasize traditional varieties like Cortland and McIntosh, while continuing to promote Jonagold under its original name. All other aspects of the project were carried out successfully, including the videos and in-store sampling.

Goals and Outcomes Achieved:

While average prices increased some over the course of the grant period, they fell short of the target, which was ro increase average wholesale prices of Cortland and McIntosh by 10 percent, from $18 to $20 per 42-pound box.

The average price per box, using data collected from Vice President Ned O'Neill of J. P. Sullivan in Ayer, Massachusetts, New England's largest packer and shipper of wholesale apples, was as follows:

September

	Cortland	McIntosh
2015	$18.19	$18.54
2016	$19.29	$18.81
2017	$20.02	$19.70
2018	$18.55	$17.85

January

2016	$16.24	$17.19
2017	$19.77	$18.57
2018	$17.89	$18.20

		June
2016	$16.60	$15.39
2017	no apples	
2018	na	$17.44

While average prices over the three years were higher than the $18 baseline, they did not rise to the desired $20 on a consistent basis. Failure to meet the goal was impacted by a poor 2016 crop and seasonal fluctuation, says O'Neill. "This is the average price of all packed apples. Each year we pack different sizes and quality. As the year progresses, the size usually gets smaller, earning less money. If we still have apples in June, they are almost all bags (first picked, last out) and those are cheaper than the tray sizes."

We were unable to develop a premium price of $25 per box for the newly rebranded Jonagold due to the threatened legal action that forced us to drop use of the JuicyGold name.

Although we were blocked from using JuicyGold, our rebranded name for Jonagold, we still took a number of steps to promote the variety by its original name:

- "New England Awarded $28,500 to promote JuicyGold and Other Varieties," *McIntosh News* newsletter, Spring 2016
- "Introducing JuicyGold," *McIntosh News* newsletter, Spring 2016
- "JuicyGold Survey," *McIntosh News* newsletter, Spring 2016
- "New England's Apple Crop Approaching Its Peak," blog post, September 7, 2016
- "A Corporate Giant Slams New England Apple Growers," blog post, October 21, 2016
- "Winning Apple Pies," blog post, November 14, 2016
- "Apple Rhapsody," blog post, September 13, 2017
- Featured apple for October, 2017 New England Apples wall calendar
- "Apple Date Pecan Bars," blog post, November 2, 2017
- "Empire and Jonagold: Great Apples By Any Name," blog post, October 4, 2018

Project Activities
In the year since the second annual report (dated October 31, 2017), beginning November 1, 2017 through September 29, 2018, the main activities were:

In-store sampling campaign

I worked closely with Ned O'Neill, vice-president of J. P. Sullivan, chair of the New England Apple Association board of directors, and Daniela Catricala of C. A. Courtesy Company in Tewksbury, Mass., to plan and implement an in-store sampling campaign of McIntosh apples in April 2018 at Market Basket stores in eastern Massachusetts, southern New Hampshire, and southern Maine.

The planning included the full board of the Association at its December 2017, and February and April 2018 meetings, and ongoing consultation with Executive Director Bar Lois Weeks.

To maximize exposure, we paired apples with other fruits and provided recipe cards with the New England Apple Association website and logo, as follows:

April 2-5	Apple-Lime-Peanut Slaw	Hudson, Massachusetts, Store #73
April 2-5	Apple and Pear Nachos	Waltham, Massachusetts, Store #79
April 6-10	Creamy Coconut Fruit	Revere, Massachusetts, Store #74
April 6-10	Creamy Coconut Fruit	Biddeford, Maine, Store #75
April 6-10	Creamy Coconut Fruit Dip	Rochester, N. Hampshire, Store #81
April 11-15	Apple and Orange Salad	Rochester, N. Hampshire, Store #81
April 21-25	Apple and Melon Crostini	Littleton, Massachusetts, Store #77
April 26-30	Creamy Coconut Fruit Dip	Athol, Massachusetts, Store #78
April 26-30	Creamy Coconut Fruit Dip	Hudson, Massachusetts, Store #73
April 26-30	Creamy Coconut Fruit Dip	Waltham, Massachusetts, Store #79

2019 New England Apples calendar

I oversaw production of our 2019 New England Apples wall calendar, which includes seven of our featured New England commercial varieties, some more than once:

- Honeycrisp (January)
- McIntosh (February)
- Jonagold (April)
- Gala (September)
- Macoun (October)
- Baldwin (December)
- Cortland (December)

I wrote the text describing each apple, and Executive Director Weeks and I took the photographs throughout the calendar year. I worked with graphic designer Christopher Weeks to design edit, and produce the calendar in June, July, and August, and growers had them available for distribution in September.

Video programs

Weeks, videographer Leslie Mason, and I produced 14 video programs featuring the most important New England varieties

The programs include music, and both a spoken narration and visual text. Each apple is shown rotating slowly on a copy stand; when the back side is exposed, a cut slice reveals the apple's inner flesh. Images of many of the varieties as they ripen on the tree are interspersed with the rotating apple, adding interest and valuable information to consumers visiting an orchard, especially for pick-your-own operations.

The footage came from videotaping in September 2017 at Cold Spring Orchard, University of Massachusetts, in Belchertown, and in October 2017 at Pine Hill Orchards in Colrain.

In November and December 2017 our video crew videotaped examples of the 14 apple varieties (we had collected outstanding specimens of the apples at various orchards earlier in the fall). Editing and final scriptwriting occurred between January and June 2018, and editing and post-production were done in July and August. The videos were completed and uploaded to YouTube in mid-August 2018, and added to the New England Apple Association website on the appropriate page of the Apple Finder.

I released the 14 videos serially through my weekly weblog at newenglandapples.org, published weekly from mid-August through November, featuring varieties as they became available in orchards and stores. In addition to the video, each weblog post had a photograph and description of the apple, and featured it in a recipe:

August 15 — Paula Red ("A Warm Welcome to Apples!")
August 22 — Ginger Gold ("Apples and Eggs")
August 29 — McIntosh ("Expect a Good Crop of McIntosh and Other New England Apples")
September 6 — Gala ("Surprise Apple Cake")
September 13 — Honeycrisp ("Apple Raspberry Crisp")
September 19 — Cortland ("Apple Pie Bakers, Start Your Ovens!")
September 27 — Macoun ("Macoun Lovers, Rejoice!")
October 4 — Empire and Jonagold ("Empire and Jonagold: Great Apples By Any Name")
October 11 — Baldwin and Northern Spy ("Classic Heirlooms: Baldwin and Northern Spy")
October 18 — Golden Delicious and Mutsu ("Pies, Brownies, and Late-Season Apple Gold")
November 3 — Golden Delicious, Jonagold, Mutsu, Northern Spy ("Winning Apple Pies")
November 28 (scheduled) — Fuji ("Ron Hackett's Cider Donuts and Favorite Apple Cookies")

Promotional events

Weeks and I met with consumers at a number of events to promote New England apples and the 14 leading varieties, including:

Franklin County CiderDays, various sites around the western Massachusetts county, November 5 and 6, 2017. Powell and Weeks met with consumers and producers at several loctions during the two-day festival, including Pine Hill Orchards and West County Cider in Colrain, and New Salem Preserves in New Salem.

Eastern States Exposition ("The Big E"), West Springfield, Mass., September 14-September 30, 2018. Powell and Weeks staffed a booth in the Massachusetts Building during the 17-day fair, New England's largest, with more than 1.5 million visitors annually. They met with consumers and promoted the leading varieties, and handed out the New England Apples brochure (which folds out like a poster) and other literature. One side of the brochure/poster highlights the region's 14 leading varieties. Fresh apples of seven of the 14 were featured at the booth: Cortland, Empire, Gala, Honeycrisp, Macoun, McIntosh, and PaulaRed.

Weeks and I were judges at AppleFest's 9th annual **Great New England Apple Pie Contest**, Wachusett Mountain, Princeton, Mass., October 13, 2018, and I wrote about and photographed it in a blog post published on November 3, "Winning Apple Pies."

I gave talks on New England apples to:

Hatfield Historical Society, Hatfield, Massachusetts, November 16, 2017
Attleboro Historical Society, Attleboro, Massachusetts, October 15, 2018
White Memorial Conservation Center, Litchfield, Connecticut, November 3, 2018
225th Anniversary Celebration, Gill, Massachusetts, November 4

Beneficiaries:

As New England's sole regional marketing organization, the New England Apple Association's grant project benefits all New England apple growers, large and small. The multifaceted, integrated marketing campaign increased consumer awareness and focused attention on the region's apples in creative new ways, the impact of which will continue to be felt over time. The combination of weblog posts, wall calendars, and video programs over multiple seasons will reverberate long after their initial impact, especially the weblog and videos, which will continue to attract viewers and readers on the Internet for the foreseeable future.

The colorful and informative point-of-purchase display cards have been widely used by member orchards, with supplies available for new orchards or to replace worn-out cards among existing ones, as needed. The cards provide a common look and feel to individual orchards, identifying their apples with the quality New England brand. Most of the region's medium to small orchards would have been unable to finance the cards on their own.

Lessons Learned

Perhaps the biggest lesson, and the most sobering one, was that even a well-planned project can be derailed by a ruthless competitor with deep pockets. The member-funded New England Apple Association lacks the resources to defend itself against specious attacks, which limited the scope of the grant project and thwarted and effort to distinguish New England apples by rebranding them as was proposed with Jonagold and JuicyGold.

The second lesson is more ambiguous. While there can be little doubt that the promotional activities and materials raised awareness of New England's leading varieties, the campaign did not achieve the targeted $2 price-per-box increase during the grant years. This may result from several factors, including those mentioned by Ned O'Neill. Weather, the size of the national apple crop, and shifting market conditions are other factors beyond New England's control.

Most of the promotions will continue for the foreseeable future, especially the 14 video programs and weblog posts. This can only boost awareness of and help increase demand for New England apples over time, but it is hard to isolate and quantify the impact of any one promotion.

Contact Person

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Organization:

Northeast Organic Farming Association

Project Title:

Specialty Crops on Urban Farms: Trials for Improved Fertility and Production in Compost-Based Soils

Project Summary:

This project was established to explore and research existing cocktail cover-cropping practices and soil mineralization, trialed with urban growing systems and utilizing specialty crops selected to reflect the surrounding communities. Four beds were created at two different urban sites, one in Mattapan and one in Somerville, and were configured thusly:

- Bed 1 – no additional amendments
- Bed 2 – Fish Emulsion
- Bed 3 – Mineralization
- Bed 4 – Cocktail cover-cropping and mineralization

Our success was measured by performing soil proxy tests on all plots and testing soil and plant tissues for each plot during all three years of the trials, and also from customers surveyed at workshops and at a mobile farmer's market, where customers were asked to comment on the taste and color of the produce. In year 3 NOFA/Mass conducted soil carbon tests, to gather more information regarding the effectiveness of cocktail cover-cropping and mineralization. Lastly, NOFA/Mass utilized the information collected from the 3-years of trials and the various soil, tissue, and carbon tests, also from the market and workshop customers, and compiled an informational resource/fact sheet on the best and most relevant practices for building soil for competitive urban specialty crop production, which has been mailed to interested parties across the state and is attached to this report.

Project Approach:

- The tasks included in this project included: developing a yearly plan for the four beds at two sites, including plans for administration of fish emulsion, soil mineralization, and cocktail cover-cropping, and then administering the plan and maintaining the plots throughout the growing and off seasons, and documenting the results from each test bed.
- Soil samples were taken from the four beds at each site and were tested at the beginning and close of each growing season during the trials.
- Tissue samples were taken from plants in the four beds at each site and were tested for toxicity levels and plant health. Samples came back with no toxicity and the conditions and nutrient content in the plants showed general improvements over the course of the three years.
- Soil Carbon proxy testing was done at the end of Year Three and indicated general improvements to soil health.
- The produce harvested at Groundwork Somerville was included in their mobile Farm Market. Groundwork Somerville stated that 25 pounds of produce from the trial beds was provided weekly to the market, and that the produce consistently outsold non-trial produce.

Goals and Outcomes Achieved:

NOFA/Mass, along with partner organizations Groundwork Somerville and Trustees Boston, supplied all activities necessary to complete the project. These activities included consultation from two consultants (Dan Kittridge, Bionutrient Food Association, and Thomas Akin, NRCS) on soil amendment and cover crops planning. NOFA/Mass helped the Partners develop systems and plan for cover cropping, mineralization, and plant crop plans. Additionally, the partner organizations purchased plant starts, amendments, seeds, and other equipment for the trials.

The outcome measures were long term, and were documented throughout the quarterly reports to MDAR, and in the resource document created at the end of the trials. Additionally, the growing practices learned during the three year trials will be continued by both partner organizations, Groundwork Somerville and Trustees Boston (City Natives). Additionally, Groundwork Somerville experienced an increase in crop yields and a corresponding increase in sales at their mobile farm market, and the soil and tissue tests all depicted an increase in soil and plant health.

The quantifying data, collected in soil and plant tissue tests, showed increased soil and plant health throughout the course of the trials. In addition, the produce grown in the test plots was documented as being larger, more attractive, and more delicious than the control test bed. It also outsold the traditionally grown produce at Groundwork Somerville's mobile farm market, which had a small increase in revenue.

Lessons Learned:

Lessons that were learned in this process were:

- The importance of proper testing. Doing the tests on a regular schedule - right at the beginning and end of each season, as well as careful sample collection ensures accurate results. Frequent soil tests and tissue sample tests, additionally periodic sugar sampling of plant tissues, and carbon proxy testing, are great tools to measure the success of work done. Additionally, careful reading and interpretation of the results is important to the process.
- Utilizing both mineralization (at the beginning of the season) and cover crops (while warm weather cash crops were growing), provided better produce and more yield in the harvest. The increase in sales noted by Groundwork Somerville at their mobile market proved to be an unexpected, positive result of the tests.

Beneficiaries:

The partner organizations benefitted from the completion of this project. Groundwork Somerville serves low-income communities that live in housing projects that surround their two gardens in Somerville, serving approximately 100 families. Groundwork Somerville has a mobile market that sells produce grown at their garden to the neighboring communities. Some of the crops include eggplants, peppers, and kale.

Trustees Boston provided City Natives Garden, located in the low-income neighborhood of Mattapan. Approximately 40 to 50 families live in the community surrounding the City

Natives location. Many local families and much of the community volunteer at City Natives Garden and share the produce.

Both locations serve areas made up of primarily low-income families, with a majority Black and Latino population. Thusly, the foot and crop plans that are grown reflect the population in the areas. Due to the presence of these gardens, families are able shop locally and take advantage of fresh produce. There are no supermarkets in either area and this project was able to bring fresh, affordable, culturally appropriate produce to the communities.

Contact Person

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Organization:

The Sustainable Business Network of Massachusetts

Project Title:

SBN Local Specialty Crop Tradeshow, Workshop & Matchmaking – Forging Business Leads & Connections in the Specialty Crop Marketplace

Project Summary:

While considerable progress has been made in the demand for specialty crops in New England, there are still many barriers that inhibit the expansion and integration of specialty crop sales. A survey from our 2015 Local Food Trade Shows revealed that specialty crop growers and buyers identified availability/buyer connections, distribution and affordability/cost as their top three barriers to specialty crops trade. These barriers are inhibiting the expansion and integration of specialty crop sales across Massachusetts and New England. We believe that by fostering dialogue between the two parties, growers/producers and buyers, many of these barriers can be addressed, alleviated and potentially overcome, while new relationships and resources for the local food movement can be formed.

By hosting a the Fifth Local Specialty Crop Trade Show, featuring workshops and a post trade show matchmaking event, the Sustainable Business Network of Massachusetts was giving specialty crop growers and buyers the space and opportunity to address these barriers, while establishing new business partnerships and increasing access and sales of specialty crops across New England.

- SBN has seen remarkable results from the previous three trade shows and our 2015 Local Food Trade Show deepened the level of participation and engagement in the food.
- 2015 was the first year of Specialty Crop ONLY Trade show. The Trade show gave specialty crop growers and potential buyers the opportunity to have in-person conversations, enabling them to establish solid business, and also discuss the barriers faced by them.
- In the previous years the workshops were distinctly divided into two groups- geared towards producers and towards the buyers. The 2015 Trade show offered the most number of workshops as compared to the previous year. All 6 workshops were combined buyer/seller workshops that addressed common issues and allowed for a question and answer period between attendees and panelists. The workshop topics were developed to directly address barriers identified by past Trade Show participants, as well as those barriers identified in regional and national reports. The workshop topics included- Trade Relationships between Growers and buyers, A vision for Local Food in New England, The Labeling Game- to discuss the various labels and what they mean to you, Discussion about Food Hubs, Marketing Strategies and Successful selling.
- The 2015 Trade show was an increase in the number of buyers. We increased our buyer outreach as compared to the previous years, and we also invited farmers market managers to attend for free. The Trades show had 123 buyers from over 100

organizations that was a 16.25% growth in the number of buyer organizations as compared to the previous years.

- For 2015 pre-event intake survey we worked closely with Community Involved in Sustaining Agriculture (CISA) to institute a more comprehensive pre-event survey to get a better understanding of the production capacity of the specialty crop producers. We more questions to the survey to get more information regarding the production capacity of the participating producers. This information helped us analyze what specialty crop products are available and on the market, how to best connect the buyers and growers to expand their sales across the state.

Project Approach:

The purpose of this project was to host a Specialty Crop Trade Show, to provide a dynamic and effective platform that facilitates business exchange through open floor trading and networking throughout the day. The Local Specialty Crop Trade Show provided opportunities for in person introductions where crop availability, pricing, and distribution options can be discussed, resulting in new business partnerships between local specialty crop growers and buyers and increased sales of specialty crop products in New England. The specialty crop producers were invited to present and sample their products to an audience of interested retail buyers looking to source more local specialty crops and products.

A Local Food Trade show was hosted at an adjacent exhibition hall from the Specialty Crop Trade show. By also inviting non-specialty crop producers, the event attracted a greater number of interested buyers and therefore benefited exhibiting specialty crop growers/producers. To ensure that grant funds were solely used for the Specialty Crop Trade show and not utilized to benefit other represented commodities including dairy, meat and other non-specialty crop products the following steps were taken-

- We had different pricing categories (Specialty Crop vendors & Non specialty crop vendors) on the Trade show registration. $100 participation fee was instituted for non-specialty crop exhibitors while specialty crop producers were able to exhibit for free. The buyers were charged $25 participation fee. The registrations & fees were tracked in separate documents for the Specialty crop vendors and the Non Specialty crop vendors. All the expenses were tracked separately, ensuring the funds allotted to the Specialty Crop vendors were not used for the other vendors.
- All program income from the Specialty Crop Trade show, 2016 was used to fund staff hours to develop additional resources to help specialty crop producers and buyers make connections all year around. The SBN staff updated the SBN's New England Specialty Crop Wholesale Buying Guide, which is posted on SBN's websites for use by restaurants and other food based institutions.

The Specialty Crop Trade Show included 3 specialized workshops on marketing, sales and finance, which directly addressed the barriers identified by past Trade show participants. The workshop topics included 'Does 'Local' Matter?, Financing for Growth and Getting In & Staying In. The workshops featured a panel of industry experts who provided insights, tools and

resources to the workshop participants. The question answer session encouraged a meaningful dialogue between the attendees and the panelists.

SBN also hosted a post trade show, matchmaking event to connect specialty crop producers and buyers. A survey from SBN's 2015 Local Food Trade Shows revealed that buyers & vendors/producers identified availability and making connections as their top barriers to buying & selling wholesale. The 'Speed Trading' event provided an opportunity for specialty crop producers and buyers of to connect and form new relationships on a one on one level. The producers displayed their products and had 5 minutes to meet with each buyer. Buyers were encouraged to share the types products that they are looking for as well as feedback on the displayed specialty crops and value added products.

SBN worked closely with project partners including 'Buy Local' groups from around the state, including the Massachusetts Department of Agricultural Resources (MDAR), Southeastern Massachusetts Agricultural Partnership (SEMAP), Community Involved in Sustaining Agriculture (CISA), Central Mass Grown, and others, as well as the Northwest Atlantic Marine Alliance (NAMA), Health Care Without Harm, Farm to Institution New England (FINE), Food Solutions New England (FSNE), Food for Free, MA Specialty Foods Association, and The New Entry Sustainable Farming Project. Partner organizations supported the project by promoting the event to their networks, and supporting SBN in developing relevant workshops and finding knowledgeable facilitators and panelists.

Specialty Crop producers and buyers were recruited from Massachusetts and New England to participate in the Trade show and the matchmaking event. Specialty crop producers were recruited and engaged beyond these events in a number of ways, including:

- Email invitation for the trade show and the matchmaking event through event lists, including our previous Local Food Trade Show and Seminar in 2010, 2013, 2014 and 2015, as well as our specialty crop producer outreach list used for SBN's Boston Local Food Festival.
- Email invitations and newsletter eblasts through Buy Local networks and other partner networks, totaling more than a few thousand e-mail contacts.
- Buyer outreach through partners and partner networks.
- Attending the Winter NOFA Conference in Worcester, MA to network with Massachusetts Specialty Crops vendors and other conference attendees.
- Promotion of all of the Trade Show/matchmaking event buyers and producers on the website throughout the year to encourage additional business connections beyond the event itself.
- Listings in SBN's Wholesale Local Buying Guide - Specialty Crop producers with an interest in selling wholesale are added to the Local Food Wholesale Buying Guide, which we host on our website and distribute directly via e-mail to interested vendors for our festival and other events to encourage the use of New England-based specialty crops.

Prior to the Trade show, the pre-event survey results were shared with event partners; we emailed an updated buyer/producer directory to partners and all event participants. We added specialty crop producers to the 2016 Wholesale Local Buying Guide, a resource that is shared

with vendors for all SBN events. A post-event exit survey & follow up survey were conducted as well to better understand the outcome of the Trade show and help us plan the better.
We conducted a post event survey for the matchmaking event too. Survey results are outlined below within Outcomes Achieved.

Starting this year, the Specialty Crop Trade show also offered free 1:1 consultation sessions with industry experts in marketing, finance and sales. Participants (producers and buyers) were able to sign up for a 20 minute slot to get some quick advice from the experts. It gave specialty growers and buyers an opportunity to think strategically about the next steps for improving the sales of specialty crops.

Goals and Outcomes Achieved:

Specialty Crop Trade show

Our goal was to engage a minimum of 37 Specialty Crop Growers/Producers from across Massachusetts and New England and a minimum of 85 wholesale Specialty Crop Buyers including restaurants, retailers, producers, institutions, and non-profits.

Our actual attendance and engagement included **40** specialty crop growers/producers and **over 151** buyers. This surpassed our goals and our numbers from our 2015 Trade Show, when we were able to engage 27 specialty crop producers and 123 buyers. Compared to the 2015 Trade show, SBN's 2016 Specialty Crop Trade Show saw a **43.2% increase** in the number of specialty crop vendors and a **48.1% increase** in the number of buyers. The event was able to attract 151 attendees from **92 buyer organization**, as many buyer organizations were sending more than one representative. We also invited farmers' market managers to attend for free. The noticeable uptake in the number of buyers and producers indicate an increased interest in specialty crop trading. A buyer/producer directory was compiled, listing specialty crop products offered and sought, and shared with all participants, including those that couldn't make it to the event, and producers that felt that while they were planning to do so in the future, their organization wasn't at a point to do wholesale just yet.

One of the objectives for this Trade Show was for 50% of participating specialty crop producers and buyers will make at least 4 new business leads.

We learned through our post-event survey, **65% of Vendors established 4 or more leads**. **62%** of the producers interacted with **over 10 buyers** at the trade show. We followed up with all event participants six months after the Trade Show via e-mail and phone. The post-event follow survey result showed that **90%** of the Specialty Crop producers generated new Business Contacts and/or Leads. 42.1% of Vendors who made business partnerships are selling Vegetables and Greens to their new Partners. 47.4% of Vendors who made business partnerships are selling Value Added products made with Specialty Crops to their new partners. 80% of Vendors who made business partnerships are selling to Retail or Wholesale Grocers
On the other hand, **38% of buyers established 4 or more leads and 56% of buyers established 3 or more leads. 72.2%** of buyers interacted with **over 10 producers.** When we followed up six months after the Trade show, **89%** of specialty crop buyers generated new

Business Contacts and/or Leads. Although we did not meet our goal of 50% of the buyer will establish 4 or more leads, we had a far larger number of buyers than last year.

100% of the producers thought the Trade show was beneficial to them. 55% of Vendors said they would definitely participate in another Local Food Trade Show. 66.7% of buyers said they wanted to participate again in future Local Food Trade Shows.

One of our greatest challenges has been collecting quantitative data to illustrate the growth in specialty crop sales. In 2016, we conducted three different comprehensive surveys for the Specialty Crop Trade show participants-

- A pre-event intake survey coupled to the event registration, gathering information about the farms, businesses and organizations participating, including products buyers are seeking, etc. This year we worked closely with partners to institute a more comprehensive pre-event survey to get a better understanding of the production capacity of the specialty crop producers.
- An exit survey distributed and collected at the event, collecting information about the number of potential business partners met, and general satisfaction with the event and workshops.
- Finally, a post event survey conducted six months after the event to determine the number of actual business partnerships formed as a result of the event.

The pre-event intake survey was mandatory to register and therefore had a 100% response rate. It revealed that the largest buyer groups attending were Food Startups/Processors/Others (24.4%), Retailers (15.11%) and Non Profits (14.6%). The product type most buyers were interested in were fresh fruits and vegetables followed by value added products made with more than 50% specialty crops. Interestingly, buyers identified Availability/connections as by far the most pressing barrier in sourcing more local food (51%), illustrating the need for projects like the Local Food Trade Show and the matchmaking event. Distribution/delivery/logistics came in second (24%) and Affordability/price came third (19%). Specialty crop growers and producers identified finding buyers/making connections as the main barrier (47%) and distribution/delivery/logistics was the second important barrier in selling more products wholesale (32%), and pricing/capital coming in third (23%). The increased interest in local specialty crops among wholesale buyers demonstrates the need to facilitate events that help make the connections between specialty crop growers and buyers. SBN will hence aim to bring together a larger number of specialty crop growers and producers prepared to sell wholesale in future Trade Shows and matchmaking events to address this demand.

The exit survey yielded a response rate of 58% among producers and 20% among buyers. Results are discussed above, in the Outcomes and Goals Achieved section.

The post event survey proved to be more challenging. The surveys were collected a little earlier than the previous years, but it was still difficult to get responses, both by phone and email. Despite many attempts to contact the buyers and producers, the response rates were lower (20% for buyers, and 52.5% for specialty crop producers). Many of the participants contacted indicated that they did not have a full recollection as considerable time had passed since the event.

Matchmaking Event

As a part SBN's ongoing strategy of connecting local specialty crop producers to local buyers, the post trade show Matchmaking event provided convenient opportunities for in-person introductions where availability, pricing, and distribution options were discussed, making it easier for buyers and sellers to do business.

Our goal was to engage a minimum of 5-10 local specialty crop producers from across New England, and attract a minimum of 10-15 local buyers.

8 specialty crop producers and 11 buyers participated in the matchmaking event:
The other objective of the matchmaking event was for 50% local specialty crop producers to establish at least one new business lead. Similarly, a minimum of 50% of buyers interested in sourcing local specialty crops will make at least two new contacts with a participating producer.

50% of the local specialty producers established 3+ business leads and 50% of the buyers made over 5 business contacts.

For the Matchmaking event we conducted a pre-event survey and an exit survey and faced similar challenges collecting data, as the Trade show surveys.

Beneficiaries:

The beneficiaries of this event include mainly Massachusetts and some New England based specialty crop growers and producers, potential specialty crop wholesale and retail buyers, and statewide 'buy local' groups. Our hope is that consumers also benefit from this event through increased access to healthy local food in their local retail grocers, restaurants, cafeterias, etc. Also, the number of visitors with an interest in our local food system to our website as well as of participants in our other SBN local food events that are more consumer oriented, is constantly growing.

The Specialty crop trade show provides a dynamic and effective platform for the local specialty crop growers and wholesale buyers, facilitating business exchange through open floor trading and networking. Through the trade show the specialty crop producers are gaining exposure for their products and services, which may lead to increased sales across the state. They also benefit by developing a broader network of fellow specialty crop growers to learn from, as well as a group of potential buyers that they have more personal connections with, making it easier to develop long term business relationships. Also, by understanding the needs of buyers seeking local specialty crops in greater detail, producers can be better prepared for crop planning.
The matchmaking event provides convenient opportunities for in-person introductions where availability, pricing, and distribution options can be discussed, making it easier for buyers and sellers to do business and form new relationships on a one on one level.
The workshops provide the producers and buyers the technical knowledge, tools and skills that will allow them to sell and source local specialty crop products more successfully and efficiently.

Buyers benefit from participation in our event by gaining a better understanding of specialty crops and specialty crop products available within the region along with developing strategies for purchasing specialty crops retail or wholesale.

SBN has a history of establishing business-to-business relationships and partnerships and of helping both food service businesses integrate local specialty crop products into their menus and helping farmers/producers outreach to food service vendors. The trade show and the matchmaking event helped SBN in facilitating deeper connections and creating greater economic impact for specialty food growers/producers in New England.

Our partners benefit by increasing exposure to markets for their members or networks of specialty crop producers and buyers. They also gain exposure via our event outreach, website, promotional materials, a vendor space at the event to network, as well as access to data generated by the event related to specialty crop sales and best practices.

Moreover, promotion of all of the Trade Show and matchmaking buyers, producers and partners on the website throughout the year encourages additional business connections beyond the events.

The 2015 Specialty Crop Trade show included 27 Specialty Crop producers, and 123 buyers from over 100 organizations. The post-event exit survey result showed that 85.7% of the Specialty Crop producers thought that participating in the Trade show was beneficial to them. 54% of the specialty crop producers interacted with an average of 15 buyers. On average, specialty crop producers were able to establish 1.5 new business partnerships as a result of the Local Food Trade Show. Specialty Crop buyers on the other hand interacted with 15 different producers on average as well. On average, buyers established 1 new business partnerships as a result of the Trade Show.

The beneficiaries of this event included mainly Massachusetts and some New England based specialty crop growers and producers, potential specialty crop wholesale and retail buyers, and statewide 'buy local' groups. Our social media and eblasts reached over 10,000, including consumers, producers, and buyers.

- To increase the financial sustainability of the Trade show, SBN had a few sponsors for the Trade show. We also secured a venue for a discounted rate, and secured a supplier (tables, chairs, electricity, AV) at almost no cost. However, due to the nature of our non-profit organization and staying true to our mission, we only work with locally and independently owned organizations, making it challenging to fund the event through sponsorships alone.
- We also charged the buyers a small fee ($25) for attending the Trade show. This added revenue, which helped offset some of the costs incurred. The grant money has helped us expand our program to include more specialty crop growers and also offer them technical assistance free of cost.
- Also, while we invited specialty crop producers to exhibit their products at the Trade Show for free in 2015, in the future, we will ask for a contribution from producers as well to help offset the costs of the event and reduce the proportion of the cost that needs to be

funded by the Specialty Crop Block Grant. Building on the experience we gained in past, we will aim to grow attendance and participation in the Trade show in the years ahead to increase financial sustainability.

- The growth in the number of buyers and producers participating in the Trade show in the previous year, clearly showed the need for expanding the Trade show in 2015. Building on the success of the previous three trade shows, SBN's 2015 Trade show offered invaluable time savings and convenient opportunities for specialty crop growers to network and establish business leads.
- 2015 was the first year of Specialty Crop ONLY Trade show. The Trade show gave specialty crop growers and potential buyers the opportunity to have in-person conversations, enabling them to establish solid business, and also discuss the barriers faced by them.
- The producer outreach for 2015 Trade show was exclusively for the specialty crop producers. With the help of the other buy local agriculture organizations; we were able to reach growers and producers throughout Massachusetts.
- The 2015 Trade show offered more technical knowledge through increased number of workshops. In the previous years the workshops were distinctly divided into two groups- geared towards producers and towards the buyers. But in 2015 all 6 workshops were combined buyer/seller workshops that addressed common issues and allowed for a question and answer period between attendees and panelists.
- We developed more in-depth surveys for the 2015 growers that helped us understand the specialty crop products, the market and the issues faced by the specialty crop growers.

Lessons Learned

By hosting the Specialty Crop Trade Show, workshops & the Matchmaking event, SBN is giving specialty crop growers and buyers the space and opportunity to learn and address barriers, while establishing new business partnerships and fostering the sales of specialty crops across Massachusetts. And by understanding the needs of buyers seeking local specialty crops in greater detail, producers can be better prepared for crop planning with the potential for guaranteed or increased sales.

The increased number of specialty crop producers/buyers and the elevated interest in Matchmaking events and workshops shown by 2016 participants, clearly states the need for a year-long program to accommodate larger number of specialty crop vendors/buyers and provide more technical support.

Specialty crop vendors identified networking with buyers and fellow producers as the most valuable aspect of the event. Tabling was ranked second, followed by 1:1 consultation sessions. The feedback we received after the Trade show made it clear that the producers and the buyers would like more time to network. In 2017, we will try to increase the duration of the Trade show. The workshops were popular and well attended. The workshop topics were thoroughly researched and planned with the help of our partners. They included a panel of experts and facilitators, providing an opportunity for the attendees to learn and explore. One of the feedback we received about the workshop was the attendees would have liked to attend more than one workshop. We will look into hosting the workshops consecutively and not simultaneously.

The specialty crop producers and buyers have also expressed an interest in having more consulting sessions with experts. We are considering adding more consulting sessions in the afternoon for the specialty crop producers and buyers to have a one-on-one session with industry experts in areas like marketing, sales, finance, legal and more.

The Trade show and matchmaking event attracted specialty crop growers and producers that were both well prepared to develop wholesale business relationships, as well as some growers that were learning more about how to build capacity to get to that level within their business but we would like to engage a larger number of Specialty Crop producers and buyers in the future. SBN aims to increase our outreach through more partners and connect with Specialty Crop growers and buyers from all across New England. We also plan to open the registrations for the Trade Show earlier so that producers can plan their schedule accordingly.

For the year 2017, SBN's goal is to broaden the engagement and impact of the previous events. SBN's will offer the specialty crop growers and buyers opportunities to form deeper business relationships and address technical issues throughout the year, creating greater economic impact for specialty crop producers in New England. SBN would like to host a yearlong program, featuring the Specialty Crop Trade Show, workshops, 1:1 consultations and matchmaking events with the purpose of offering economic growth opportunities and addressing technical issues to specialty crop growers and buyers. This program is building upon the success of the previous Trade Shows and Matchmaking event, and will continue to leverage the relationships and resources developed to date, to support the growth of Massachusetts and the New England specialty crop food industry throughout the 2017.

According to the USDA Economic research service , after a significantly lower average net cash farm income (NCFI) forecast in 2015 due to lower prices, NCFI for farm businesses specializing in farm program crops is expected to bounce back in 2016, increasing by between 2 and 22 percent. In contrast to program commodities, average NCFI for specialty crop farm businesses is forecast to decrease 4.5 percent in 2016. This decrease is due to the challenges specialty crops face to expansion and viability. New England specialty crops also face a number of barriers to full integration into the supply chain of food vendors—food and beverage vendors, specialty food manufacturers, and institutions and other buyers.

The aim for the 2016 Specialty Crop Trade show and matchmaking event was to form new business relationships between specialty crop producers and buyers, as well as address and try to overcome persisting barriers to the specialty crop trade. The 2016 trade show and matchmaking event increased access to Massachusetts and New England specialty crop products by eliminating barriers that are preventing buyers and sellers from doing business, thereby successfully achieving its goal of increasing the sales of specialty crops across Massachusetts and New England.

Budget:

- The Advertising & Promotion fees are to promote the Specialty Crop Trade show on social media & handouts of various organizations. Through advertising & promotions, we hope to increase our outreach to help reach more local Specialty Crop buyers & sellers.

We will not promote an individual organization or business through our marketing & promotions.

Item Description	Justification for Supplies	Per-Unit Cost	Number of Units/Pieces Purchased	Funds Requested
Event Programs and Directories	For distribution among vendors and buyers	$ 2.00	150	$300.00
Signage	Welcome, Directions, etc.	$ 20.00	11	$220.00
Advertising and Promotion Fees	PayPal Fees, Facebook ads, etc.			$200.00

Contact Person

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Organization:

The Third Sector/New Entry Sustainable Farming Project

Project Title:

Supporting Beginning Farmers with Production, Post-Harvest, and Promotion of Heirloom and Specialty Crops for Direct and Institutional Markets

Project Summary:

Our project, "Supporting Beginning Farmers with Production, Post-Harvest, and Promotion of Heirloom and Specialty Crops for Direct and Institutional Markets" trained and educated 25 small-scale growers directly and over 80 indirectly on crop quality techniques and strategies, with a special focus on specialty greens, tomatoes, and brassicas. Our methods included creation and dissemination of a crop quality guide, hands-on, in-field workshops at our incubator farm, and one-on-one technical assistance directly to the producers who sell produce to our World PEAS Food Hub. We measured the impact of our crop quality work by quantifying the amount of revenue increase due to reduced losses and culls of harvested tomatoes, specialty greens, and cucurbits delivered to the Food Hub. Overall, World PEAS Food Hub producers increased tomato sales by 4%, cucurbit sales increased by 55%, and specialty greens sales increased by 53% (our original targets had been 10%, 5%, and 10% respectively). While more work needs to be done, we are pleased with the overall results of our project and will continue to distribute our crop quality guide and teach crop quality strategies to our producers.

Project Approach:

Our project aimed to increase crop quality and producer revenue using the following approaches:

1. Develop a practical training curriculum on specialty crop production, post-harvest handling, and food safety protocols for each of the major specialty crop families: tomatoes; brassicas; and specialty greens. Track and document on-farm behavior changes for at least 60 producers to improve crop quality and food safety practices.
2. Create a Comprehensive Guide to Crop Quality for Specialty Crops, and distribute via the New Entry website.
3. Provide training and/or technical assistance to at least 80 small-scale and beginning specialty crop producers in MA through the following venues, measurable by training event attendance and weekly technical assistance tracking. Increase cash receipts by 10% for at least 18 producers, measurable by producer sales data.

Specific Training/Technical Assistance to be provided:

A. Conduct a minimum of eight (8) training workshops for small-scale and beginning farmers on the following topics:
    i. Tomato harvest readiness and post-harvest;
    ii. Cucurbit production, harvest, curing, and storage practices;
    iii. Nutrient and Pest management practices for leafy greens;
    iv. Post-harvest handling and cooling practices;
    v. Food Safety training;
    vi. Assessing harvest readiness and estimating crop quantities in the field;
    vii. Soil fertility for improved crop quality;

viii. Wholesale marketing strategies and buyer expectations– packaging, uniformity, consistency.

Training workshops shall include education on any applicable federal, state, and/or local regulation that pertains to the particular topic, including but not limited to, plant nutrients and food safety.

B. Record and disseminate two (2) webinars for small-scale and beginning farmers on crop quality challenges for major specialty crops.
C. Provide technical assistance for small-scale and beginning farmers on specialty crop production, harvest, post-harvest, and food safety practices. Track technical assistance activities weekly, and conduct an annual survey of producers to demonstrate project outcomes. The Contractor shall provide the following technical assistance:
   i. Conduct weekly site visits with participating farms to provide individual assistance and coaching in all production, quality, post-harvest handling, and food safety practices;
   ii. Design and distribute training materials on safe food handling practices;
   iii. Help producers incorporate food safety required practices and record keeping strategies into their daily work flow;
   iv. Document and track crop quality (photo and video) as produce is delivered to the World PEAS Food Hub Site;
   v. Compile, review, research, and create crop quality resources to disseminate to farmers and partner organizations.

Goals and Outcomes Achieved:

Our project was able to achieve several of our goals and desired outcomes with a few exceptions. We completed a crop quality guide for tomatoes, specialty greens, and cucurbits during the summer of 2016 with the help of an intern from Tufts University, and posted it to our website, creating accessibility for farmers everywhere.

With the help of some additional funding we were awarded to train small-scale producers on the new FSMA regulations, we offered a food safety and nutrient management training to all World PEAS Food Hub producers in the spring of 2017. Within that training, we highlighted post-harvest handling and food safety protocols for the three crop families of focus to this project – tomatoes, specialty greens, and cucurbits. We tracked that 25 producers attended these spring trainings.

We also conducted field trainings throughout the 2016 and 2017 growing season (5 in the 2016 season and 8 in the 2017 season). Topics for these trainings included food safety, soil fertility for improved crop quality, wholesale marketing strategies and buyer expectations, nutrient and pest management practices, and assessing harvest readiness. All field trainings were designed with our incubator farmers primarily in mind, but were open to the general public. However, attendance for these field trainings was limited. We found it difficult to find a time when all of our incubator farmers could attend, given that many of them are transitioning slowly into farming full time and still hold off-farm jobs (many full-time). We are re-working our plans for these field workshops moving forward.

In addition to the field trainings, we provided one-on-one technical assistance to our World PEAS farmers and incubator farmers on many topics, always encouraging towards greater crop quality. Many producers received information about how to hydro-cool their specialty greens, trellis their tomatoes effectively, avoid disease and pest issues in cucurbits, and much more. This year, our new case management system was unveiled, in which we conducted pre and post self-assessments with farmers, helped them develop food safety plans and learning and goals plans, and distributed templates and resources for record keeping strategies. Approximately 22 farmers received over 400 hours of technical assistance this summer from our farmer training staff, as documented in our Salesforce records (our client relationship management system).

The one significant body of work that we did not accomplish was to record and disseminate 2 webinars on crop quality challenges for major specialty crops. This is because in doing our one-on-one technical assistance, we determined that the webinar format would not be an effective format for our producer population. As such, we decided to devote a greater part of our time and resources towards individual technical assistance, because that investment of time seemed to have the most impact.

As mentioned in our project summary, we wanted to measure our impact by the increase in revenues realized by specialty crop producers selling to the World PEAS Food Hub. Specifically, we wanted to see tomato revenues increase by 10% due to reduced losses and culls of harvested tomatoes delivered to the Food Hub, cucurbit revenues increase by 5% due to reduced rejection of crops because of lack of uniformity, unripe or overripe fruit, and proper curing and storage practices, and specialty greens revenues will increase by 10% due to improved pest management, soil fertility practices, and post-harvest cooling that address leaf quality/integrity, improve coloring, and extend the shelf life of leafy greens. While we still have significant work to do in training producers on tomatoes, we did see revenues increase by 4% for tomatoes, 53% for greens, and 55% for cucurbits.

Beneficiaries:

The main beneficiaries of our project included the 25 small-scale producers that were directly benefitted by the development of our guide one-on-one technical assistance. These are farmers who sell to World PEAS Food Hub, or who are growing their farming businesses at our incubator farm this season. However, we estimate that at least 80, if not many more producers, are impacted by this project and the crop quality guide being available online at our website.

Lessons Learned

Through this project, we learned two major lessons. The first is that our field trainings need to be re-worked and the timing of each training needs to be re-examined. Attendance at each training was limited, but our staff takes great care to create quality workshops and presentations for attendees. This means there is a mismatch of time, energy, and resources. Based off this experience, current discussion has been to move towards offering trainings within the scope of a more cohesive class in sustainable production, to which incubator farmers would be highly encouraged to attend.

The second is that webinars are not a useful format of information for our farmers. Not only are they very busy in-season, but many are immigrants and refugees that have limited access to computers or lack of experience using a webinar format. In the future, we will plan to invest our time and resources in a greater amount of one-on-one technical assistance.
Finally, an general lesson we learned is that change is slow, and time and dedication are essential Many farmers are producing much higher quality of crops now than before the project, but there is still a great deal of work to be done.

Contact Person

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Organization:

University of Massachusetts, Amherst

Project Title:

Increasing Sales, Fruit Quality, and Profitability of Cucurbit Production through Integrated Disease Management

Project Summary:

Improving management of cucurbit diseases, especially cucurbit downy mildew (CDM), has been consistently identified by growers and processors in MA as a major research priority in the past ten years. In 2004, new strains of CDM arrived which had overcome resistance that was then standard in all cucumber varieties and adequately controlled the disease. Since that time, growers have struggled to produce late-season cucurbit crops, and have experienced yield losses to fall-harvested crops such as winter squash, as ripening and curing of fruit is now routinely cut short due to late-season disease. Using resistant varieties reduces growers' reliance on fungicides, which can be very costly and time-consuming to apply with the regularity needed to adequately control disease. Furthermore, new evidence suggests that chlorothalonil, the active ingredient in the fungicide Bravo, has negative effects on honeybees which pollinate all cucurbit crops. The majority of conventional cucurbit growers rely on chlorothalonil as the backbone of preventative fungicide programs to control both powdery mildew and CDM. It has broad-spectrum activity, low risk for fungicide resistance development, and leads to significant increases in marketable yield and quality. Between the increase in demand for organically-produced cucurbit crops and the increasing concern for bee health, it is clear that finding effective new disease management tools is necessary to prevent losses and meet demand for cucurbits in MA.

Our goal was to increase yield and quality of cucurbits by providing growers with new tools to maintain their crops in the face of increasing disease pressure, while protecting the environment and honeybees. Our objectives were to evaluate new resistant cultivars, and to evaluate the impact of combining use of host-resistance with use of alternative fungicides that pose reduced-risks to the environment and honeybees, and which can be used in organic cropping systems. A third objective was to determine the impacts of disease on yield and sales of cucurbit crops in MA, and demonstrate cost-effectiveness of controlling disease using integrated management programs. We have identified several new cultivars with improved disease resistance and yield, have shown that the duration of the fall cucumber season can be extended by up to 48 days using these approaches, and have demonstrated that spraying alternative fungicides can improve profitability. Our findings have been shared directly with 570 growers through presentations and field day demonstrations and indirectly with additional growers, extension personnel, and home gardeners through our newsletter, which reaches 2,500, and publication of technical reports and a forthcoming academic paper. This project increased knowledge about and implementation of cost-effective best management practices for cucurbit production relevant to conventional and organic growers in MA and across the Northeast.

Project Approach:

Towards our goals of increasing sales, quality, and profitability of fall cucumbers, two research trials were undertaken and each repeated once. In our evaluations of new cucumber varieties, we **identified two**

excellent new varieties with very strong CDM resistance and marketable yields, Bristol and NY264. NY264 grew latest into the fall in both years, **extending the growing season by 3 to 4 weeks with no fungicide sprays**. **Four other varieties performed significantly better than the susceptible control** but significantly worse than Bristol and NY264, including SV4719CS, DMR401, Diamondback, and Python. These varieties are now all available commercially and growers have started planting them for their fall successions, based on our educational outreach at field days, grower meetings, and subsequent word of mouth. In our second experiment, investigating the cost-efficiency of spraying conventional or organic fungicides and/or planting resistant varieties, we learned that spraying conventional fungicides did significantly reduce disease severity but did not always improve yield. When disease pressure was very high and the variety was very susceptible, the conventional fungicide program did significantly improve disease control and marketable yield. Spraying organic fungicides did not significantly increase disease control or yield. Planting a resistant instead of susceptible variety did significantly improve marketable yield in both years. We conducted interviews with growers at different production scales and systems to come up with baseline figures for historical disease pressure, cucumber production practices, and cucumber pricing. When the cost of materials, time, and labor to spray, and price at market are factored in, planting the resistant variety conferred a huge increase in profit in both years. The highest profits were achieved by spraying organic fungicides on the resistant variety, in part because of the increased price per pound for organic versus conventional cucumbers ($2.50/pound versus $2.00 per pound). In the spray trial, we were able to **increase harvest period by 18 days in 2016 and by 48 days in 2017.**

Results of these studies were shared widely with growers, industry, and other extension professionals through written publications and oral presentations and field days. Growers attending field days reported **29-36% increases in knowledge about CDM biology and management** and **78-95% were likely to implement these strategies on their farms.**

The project did not benefit any non-specialty crops and there were no project partners involved.

Goals and Outcomes Achieved:

Research Outcomes

Two replicated trials were conducted per year for a total of four trials. The first study compared different cucumber varieties with purported resistance to CDM, the second study investigated the economic impacts of spraying fungicides on a resistant or susceptible cucumber variety, under both conventional and organic production systems. For a full report of research findings with figures please see: https://ag.umass.edu/vegetable/outreach-project/increasing-sales-fruit-quality-profitability-of-cucurbit-production

Variety Trials

In 2016 we evaluated five cucumber varieties with resistance to downy and powdery mildews compared to a susceptible control with four replicates of each variety arranged in randomized complete blocks (see Figure 1 for variety information). In 2016, the Northeast experienced a moderate drought and disease progress was slow due to hot and dry conditions and the pathogen was first detected on 17 Aug in ‘Straight Eight’ plots. Eventually disease pressure increased and became high across the trial by the end of the season and the susceptible control reached 100% severity on 6 September (for results see Figure 1).

Progress of downy mildew was significantly reduced in all resistant cultivars relative to the susceptible control. Of the varieties evaluated, in addition to SV4719CS which has become the new standard in DM-resistance, Green Bowl, Bristol and NY264 seem to be good candidates for fall cucumber plantings in MA. They had strong powdery and downy mildew resistance, and also showed resistance to other diseases present in the study including anthracnose and watermelon mosaic virus. These varieties also had attractive and good-tasting fruit that would be suitable for New England markets. NY264 has the strongest resistance and plant vigor, though the plant requires a lot of heat units to produce fruit and therefore has longer days to maturity (70 days). In a hot, sunny year like this one the plants did wonderfully and produced abundantly, but in a cooler year perhaps this might not be the case. Fruit from NY264 are short (4-6") and light in color relative to other slicing-type cucumbers and may not be accepted by all markets, but they were well-reviewed by our testers for both taste and appearance. In addition to having lower disease severity and therefore higher plant vigor, the resistant varieties did also show improved yield (Figure 2). NY264 had the highest yield overall, and remained harvestable longest, until September 30th. DMR401 also had a very high yield, but the fruit were consistently misshapen, making them unmarketable. Straight 8 plants were severely affected by diseases including watermelon mosaic virus which came in early and caused rapid decline in vigor and severely reduced marketability of fruit, as they were deformed and discolored with a warty texture. Straight 8 was last harvested on September 2nd—a 28-day increase in harvest period of the resistant NY264 over the susceptible control Straight 8. Most of the varieties evaluated are currently or will be available next season through various seed distributors including Harris, Johnny's and Common Wealth Seed Growers.

In the 2017 variety trial, we added two new resistant cucumber varieties for a total of six, and compared those to a susceptible control. In 2017 conditions were very favorable for disease development all season and the pathogen arrived two weeks earlier than in 2016, on 2 August, and severity reached 100% in susceptible control plots by 22 August. Powdery mildew was first observed on 3 August in 2016 and on 1 August in 2017. Severity and progress of powdery mildew was significantly reduced in all resistant varieties relative to the susceptible control in both years. Control of powdery mildew in resistant cultivars was strong and a non-parametric (Kruskal-Wallis) test was necessary because of all the zeroes in the dataset.

All of the resistant varieties had significantly less disease than the susceptible control, Straight 8. Green Bowl, Bristol, and NY264 had the lowest DM ratings. Diamondback and Python performed as well as SV4719CS in terms of downy mildew control and marketable yield, while Bristol, DMR401, and NY264 had significantly higher disease control and yields. Green Bowl had the lowest yield and also an off-flavor. Therefore, of the eight varieties evaluated, Bristol and NY264 seem to be the best candidates for fall cucumber plantings in MA. They had strong powdery and downy mildew resistance, showed resistance to other diseases present in the study including anthracnose and watermelon mosaic virus. These varieties also had high yields of attractive and good-tasting fruit that would be suitable for New England markets.

Economics of Spraying Trials

In a second experiment, we combined use of host-resistance with use of organic or conventional fungicides in order to demonstrate cost-effectiveness of managing disease with different

strategies. In this factorial design with four replicates arranged in randomized complete blocks, we evaluated a susceptible (Straight 8) or resistant variety (SV4719CS) with either no fungicide sprays, conventional sprays, or organic sprays. During the winter of 2017, we conducted qualitative interviews with three growers operating at different scales of production and both organic and conventional production systems, in order to collect information on historic production, disease pressure, and to determine the cost of spraying (cost of labor, amount of time to spray) and the prices garnered in different markets. We used this information to determine the cost-efficiency of planting resistant varieties and/or spraying under conventional or organic systems.

In 2016, drought conditions impacted plants and disease pressure. CDM was first observed on 14 August. Downy mildew pressure was high due to all the untreated cucumbers in the resistant variety study and in a nearby CDM sentinel plot, but progressed slowly due to dry conditions. We rated disease severity weekly and harvested twice a week beginning July 26 (for results see Figures 2 and 3).

Marketable yield of the resistant variety was significantly increased relative to the susceptible variety, and none of the fungicide sprays improved yield significantly. The harvest period was increased by 18 days in the conventional or organic-sprayed resistant variety plots relative to the susceptible unsprayed control plots. Planting the resistant variety and not spraying resulted in increase profits of $15,415 per acre for conventional systems and by $19,268 per acre for organic systems. The most profitable system was the organically sprayed resistant variety ($25,611 per acre), in part due to the increase price for organic produce.

In 2017, downy mildew arrived two weeks earlier (August 2) than in 2016 and pressure was extremely high due to all the untreated cucumbers in the resistant variety study and consistent rainy weather (for results see Figures 2 and 4).

The unsprayed susceptible variety yielded very poorly, since DM arrived early and disease pressure was very high. Yield of Straight 8 was significantly improved and in fact highest of all treatments when conventional pesticides were sprayed. Organic sprays did not significantly improve yield in the susceptible variety. Yield was increased in the resistant variety relative to the susceptible variety, though this increase was significant only for plots that were also sprayed with either conventional or organic sprays. Spraying conventional fungicides on the high-yielding susceptible variety Straight 8 was most profitable, in 2017. However, planting a resistant variety and not spraying at all resulted in increased profits of $13,861 to $17,326 per acre, depending on market price, relative to the unsprayed susceptible variety.

In summary, when a resistant variety was used in combination with alternative fungicides marketable yield was increased by up to 62% in 2016 and 221.5% in 2017. Taking into account the cost of materials and labor to spray, profits for organic production systems were increased by $123,517/A in 2016 and $18,430/A in 2017 while profits for conventional production systems were increased by in $91,607/A 2016 and $15,626/A in 2017.

Educational Outputs

- Grower surveys were conducted and information on historic disease pressure, cucumber production, yield and pricing was collected. This information was used to estimate the cost of spraying used in calculating the profitability of different management strategies.
- Two peer-reviewed reports were published in Plant Disease Management Reports
    - Scheufele, S.B., and G. Higgins, 2017. Evaluation of resistant cultivars for management of downy and powdery mildews in Fall cucumbers, 2016. Plant Disease Management Reports. Volume 11: V104.
    - Scheufele, S.B., and G. Higgins, 2017. Evaluation of a resistant and susceptible cultivar with or without fungicides for management of downy and powdery mildew in Fall cucumbers, 2016. Plant Disease Management Reports. Volume 11: V116.
- One academic paper is in preparation. This paper will summarize all four experiments and the economic analyses and will be submitted for publication in winter 2019.
- One article including new cucumber varieties with CDM resistance was published in Vegetable Notes newsletter, reaching over 2,500 growers, extension personnel and home gardeners
    - Scheufele, S.B. 2017. Choose resistant varieties. Vegetable Notes V:29, 2. Feb 16, 2017. http://ag.umass.edu/sites/ag.umass.edu/files/newsletters/february_16_2017_vegetable_notes.pdf
- Five presentations were given to grower and extension personnel between 2017-2019 reaching 365 individuals
    - NOFA-MA, August 12, 2016: Integrated pest management in Cucurbits, 35 attendees
    - SEMAP, February 26, 2017: Integrated pest management in Cucurbits, 25 attendees
    - New England Veg and Fruit Conference, December 17, 2017, 160 attendees
    - Eastern NY Winter Conference, February 21. 2018, 100 attendees
    - NEVBGA, January 5, 2019: estimated 45 attendees
- Presentation was posted online at: https://ag.umass.edu/vegetable/outreach-project/increasing-sales-fruit-quality-profitability-of-cucurbit-production
- Three field days demonstrating effects of planting resistant varieties and using alternative fungicides for disease control in cucumbers were hosted, with 105 growers attending. Results from surveys of meeting attendees are summarized below:
    - 2016, 30 attendees: A 29% average increase in knowledge and 95% likely to implement these strategies
    - 2017, 50 attendees: A 34% average increase in knowledge, 86% likely to implement for planting resistant cucumbers, and 36% average increase in knowledge and 78% likely to implement alternative fungicides

- 2018, 25 attendees: A 29% average increase in knowledge and 90% would implement

Our performance targets relating to educational outcomes specified that at least 25-50 growers would attend educational workshops and presentations, and that at least 50% report increased knowledge of CDM and its management, and at least 25% indicate a desire to implement new strategies (planting resistant varieties and using alternative fungicides to increase profitability and protect bees). Our actual accomplishments towards these goals were: 105 growers attended educational workshops (exceeding our target of 25-50) and results of surveys conducted revealed an average increase in knowledge of 30% (31.5 growers compared to target of 25 growers) and an average of 88% were likely to implement these strategies on their farms (92.4 growers compared to target of 6.25 growers adopt a practice). Furthermore, through our continued, direct interactions with MA cucumber growers we can say confidently that many growers have begun planting these varieties for fall plantings and have become aware of problems with using chlorothalonil and are clearly interested in using resistant varieties to reduce disease pressure and reduce their need to spray.

Our performance targets relating to improving yield and profitability of cucumber production in MA were to demonstrate:

a) yield increases of at least 10% when using resistant varieties
b) yield increases of at least 10% when using alternative fungicides
c) yield increases of at least 25% when using an integrated approach to disease management
d) extend harvest period by at least one week relative to traditional cucumber production practices
e) Cost-benefit analyses show increased yields and decreased costs associated with integrated disease management treatments lead to more profitable cucumber production

Our actual accomplishments towards these goals were:

a) Marketable yield increases of up to 125% in 2017 (10,000 lb/A) and 221% in 2016 (30,000 lb/A) using resistant varieties alone
b) No significant differences in marketable yield were achieved using alternative fungicides alone (OMRI-approved materials including copper and Oxidate)
c) Marketable yield increases of up to 62% in 2016 and 221.5% in 2017 were achieved when a resistant variety was used in combination with alternative fungicides.
d) Taking into account the cost of materials and labor to spray, profits for organic production systems were increased by $123,517/A in 2016 and $18,430/A in 2017 while profits for conventional production systems were increased by in $91,607/A 2016 and $15,626/A in 2017

Beneficiaries:

This project benefitted all growers of cucumbers across the Northeast. According to the 2012 census of Ag this means 995 farms in New England; 263 farms in Massachusetts growing at least

391 acres of cucumbers for fresh market. Our outreach efforts have been substantial, with 470 direct contacts, reaching a large and diverse audience of growers and ag service providers from across the Northeast and beyond. These efforts included a talk at the New England Vegetable and Fruit Conference, which draws attendees from across the Northeast, mid-Atlantic and Canada for 160 growers and ag service providers; and another in Eastern NY for 100 growers. Extension agents also attend these meetings and read our published PDMR reports, and further spread our findings through their networks as well.

Our research demonstrated that using resistant varieties and fungicides in an integrated approach can result in significant increases in profits. Profits for fall cucumber plantings in organic production systems were increased by $123,517/A in 2016 and $18,430/A in 2017, while profits for fall cucumber plantings in conventional production systems were increased by in $91,607/A 2016 and $15,626/A in 2017.

If this integrated approach were implemented over the 391 acres of fresh market cucumbers grown annually in MA that would mean an increase in profit of $5,419,651 grown conventionally or $6,774,466 if grown organically.

Lessons Learned

1. Cucumber varieties with resistance to downy mildew come with resistance to other diseases including powdery mildew and many viruses. Because of this, they are more consistent and have higher marketable yields than susceptible varieties.
2. Of the varieties tested, NY264 and Bristol performed the best in terms of both disease control and marketable yield.
3. Spraying the resistant variety usually resulted in small but not significant increases in yield, but the relatively low cost of spraying means that they do tend to increase profitability.
4. During the 2016 drought, we planted cucumber seedlings into black plastic mulched beds and had significant losses due to transplant shock. Since then we have switched to white plastic mulch, which stays cooler than black mulch, and have seen much better survival and vigorous growth after transplanting. For fall plantings, white plastic mulch may be a better choice than the traditional black plastic mulch.

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